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INFORMATION REQUIREMENTS OF A MANAGEMENT
INFORMATION SYSTEM RELATING TO THE BUDETARY
DECISIONS OF A COAST GUARD PROGRAM MANAGER

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THESIS

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by

James Dale Burk

and

John Kennedy Miner

December 1974

Thesis Advisor:

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Information Requirements of a Management
Information System Relating to the Budgetary
Decisions of a Coast Guard Program Manager

by

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Submitted in partial fulfillment of the
requirements for the degree of

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December 1974

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Information is the lifeblood of any organization. In an era where governmental budgeting is becoming more complex and more significant, operations without the aid of an effective Management Information System is difficult at best. Prior to the implementation of any Management Information System, a sound all-encompassing data base is essential. This thesis proposes information requirements to such a data base to be utilized by Coast Guard district level Program Managers when making budgetary decisions.

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I. INTRODUCTION

Since the inception of the Program Manager function at the district level of the Coast Guard organization, it has become apparent that little has been undertaken in the area of budgetary analysis to assist a perspective Program Manager in the performance of his assigned tasks. In the realm of subhead 30.00 budgeting the dilemma is more acute, since subhead 30.00 administration is even fresher to the scene than the Program Manager function itself. Little if any documentation exists delineating the procedural aspects relating to the task of efficient Program Manager performance, as regards subhead 30.00 budgeting. Highly motivated, dedicated and top quality line officers of the U.S. Coast Guard are being placed into the role of Program Manager at the district level, with little or no financial training immediately beforehand. As with other aspects of government, financial management in the Coast Guard is becoming an increasingly complex operation. Highly trained and specialized analysts in public service as well as private industry find difficulty in planning and maintaining budgets. Yet, the Coast Guard assumes that any of its officers can simply step in and run an efficient and effective program at the district level.

It is felt by the authors that now is the time for initiating basic building blocks for future implementation of a sophisticated Management Information System to be utilized

by the Program Manager as regarding subhead 30.00 budgetary decisions. Even at this writing, the lack of an effective Management Information System is felt within the Coast Guard since operating budgets of the military services are perennially undergoing Congressional cuts. An effective Management Information System could make implementation of this reduced budget more efficient. Flying by the seat of one's pants with regard to budgeting limited resources cannot yield substantial desired results in the long run.

It is the attempt of this thesis to present the difficulties currently experienced by the district level Program Managers as seen by both the Program Managers themselves and the authors. Further, the authors will present their interpretation of some of the necessary information needed as inputs into a data base for any future Management Information System.

The authors' goals will be accomplished by way of an initial discourse on the background of the thesis area in general. Then a brief discussion of Management Information Systems as a whole, which is vital to any perception of a Coast Guard MIS, will be presented. Pitfalls to the proposed MIS will follow. A mention of Coast Guard involvement in MIS will provide the backdrop for consideration of the subhead 30.00 budgetary process.

A theoretical budget flow will be presented so as to contrast it with the actual budgetary operations researched.

Having thus presented background as well as actual operations pertaining to subhead 30.00 budgeting at the district Program Manager level, attention will turn to the information requirements of the Program Manager. These information requirements will be approached from both the planning and the operational aspects of the budget cycle.

Finally, conclusions of the authors combined with insights into possible future research areas will be discussed.

II. PERSPECTIVE

A. BACKGROUND AND DEFINITIONS

To examine the management process used by various Coast Guard Program Managers (PM) and Assistant Program Managers (APM) when making budgetary decisions, it is first necessary that the reader have a general concept of the total budgetary process. Also, since this thesis explored only a small portion of this process, a brief description of the background would be beneficial.

The Coast Guard's Manual of Budgetary Administration offers the following:

"It is now clearly recognized that the activities of modern government cannot be managed intelligently without a continuous and organized flow and review of useful information. This information concerns the environment in which the activities are conducted, the operating plans for carrying them out, and the actual results achieved. The budgetary process is an extremely important part of this flow and review of information as it includes not only the initial operational and financial planning but the final results achieved from the expenditure of monies and other resources."¹

The preceding paragraph indicates the importance of the budgeting function as viewed by Coast Guard managers. Budgeting is defined as follows:

"Budgeting is a planned, disciplined approach to the problem of fund management. It is the process by which planned operations and objectives are translated into their related financial requirements for purpose of both estimating and executing those plans."²

¹ Coast Guard's Manual of Budget Administration (CG-255), 6 July 1973, p. ix.

² Ibid, p. ix.

Finally and most importantly, the actual purpose of the budget as viewed by Coast Guard managers:

1. "To bring information concerning proposed programs and their financing to the proper administrative level for evaluating and approval. To be effective in this purpose, the budget must present a clear and accurate picture of recent accomplishments and future plans in relation to the costs involved.
2. "To provide measurable standards and/or goals to which progress in carrying out the approved programs may be readily compared and against which proposed plan changes may be evaluated. These standards or goals are expressed in terms of work load estimates, operational plans, and a financial plan."³

Figure 1 is a very basic and somewhat simplified diagram of the budgetary cycle, but is adequate for the purposes of this thesis. Once Congress has granted obligational authority to the Coast Guard (Table I), the money is distributed by Headquarters to the various allotment units (District Offices and Headquarters Units). The money received by the District Office (Table II) has been separated into "subhead" categories. The table shows the breakdown of the allotment for the Operating Expense appropriation into the various subheads (i.e. Subhead 20 (SH 20) Permanent Change of Station Travel, SH 43 Civil Engineering, etc.). As is readily apparent from this table, SH 30 receives the largest share of the total funds (67%). Subhead 30 is used to fund normal recurring operations expenses and maintenance expenses. This fund crosses all divisional boundaries.

³ Ibid, p. ix.

Subhead 30 funds within the district are divided into two major portions: unit controlled and district controlled. Although the unit controlled portion is administered by the Commanding Officers of the various district units, it is the District Program and Assistant Program Managers who, within their program areas, are primarily responsible for budgeting decisions. A Program Manager as defined by applicable Coast Guard instructions is:

"The division chief in the district office who is immediately responsible under the District Commander for overall management of a program within the district (e.g. the Chief Operations Division is the District Program Manager for Aids to Navigation)."⁴

It is the function of the Program Manager to administer the spending of funds from the various subheads allotted to him. Since a particular program covers a wide variety of functions most Program Managers will be indirectly responsible for decisions in many subheads.

It should be noted that funds are divided along functional lines (i.e. Civil Engineering, Naval Engineering, Operations and Maintenance, etc.) while decisions influencing the use of these funds are delegated along program lines (i.e. Chief Operations Division, Chief Merchant Marine Safety Division, etc.). Subhead 30, by far the largest in the Operating Expense appropriation, is a relatively new category (1970) and is the most difficult to control. For these

⁴ Commandant of the Coast Guard Instruction 7132.7A, Subhead 30.00, Operating and Maintenance Costs, Financial Management and Administration, 10 February 1972, p. 3.

reasons it is the budgeting of this subhead, by the Program Manager, that we shall examine in detail.

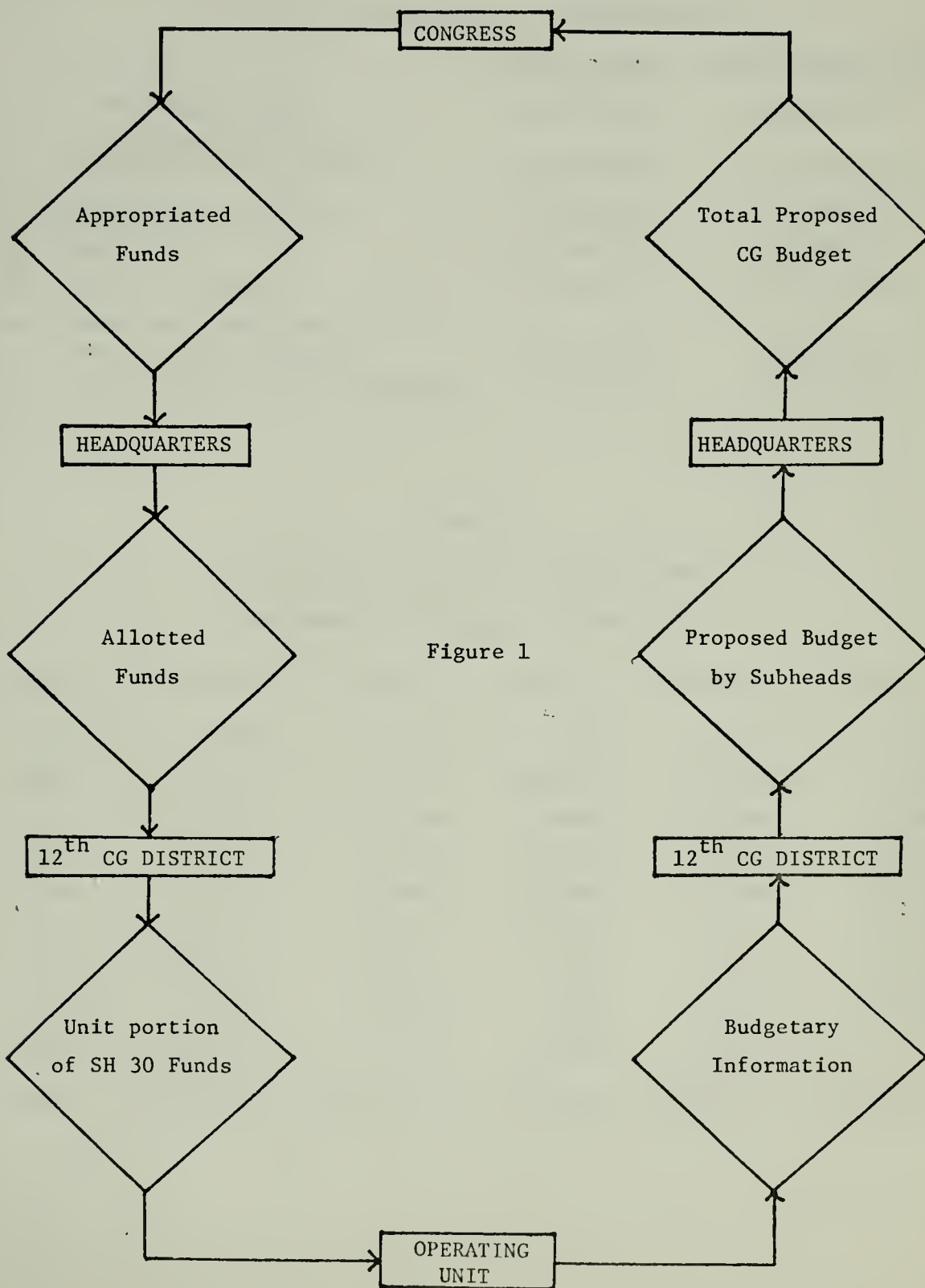


Figure 1

TABLE I

FY 1974 CONGRESSIONAL CG APPROPRIATIONS

	CATEGORY	BUDGET REQUEST	FINAL APPROPRIATION
1.	Operating Expenses	546,198,006	545,228,006
2.	Acquisition, Construction and Improvement (AC&I)	74,500,000	75,500,000
3.	Alteration of Bridges	7,000,000	4,000,000
4.	Retired Pay	81,000,000	81,000,000
5.	Reserve Training	25,000,000	25,000,000
6.	Research, Development, Test and Evaluation (RDT&E)	17,000,000	14,000,000
7.	State Boating Safety Assistance	4,500,000	3,500,000

TABLE II

FY 1974 12th DISTRICT SUBHEAD ALLOTMENTS

FOR OPERATING EXPENSES APPROPRIATIONS

Subhead	Total	1 st Qtr.	2 nd Qtr.	3 rd Qtr.	4 th Qtr.
20.00	\$ 8,800	\$ 2,800	\$ 2,000	\$ 2,000	\$ 2,000
30.00	3,937,000	1,024,000	984,000	984,000	945,000
42.00	297,000	75,000	75,000	74,000	73,000
43.00	380,000	84,000	99,000	99,000	98,000
45.00	759,000	228,000	122,000	174,000	235,000
46.00	238,000	60,000	60,000	59,000	59,000
54.00	42,000	8,000	8,000	18,000	8,000
56.00	30,000	8,900	8,000	7,000	7,000
80.00	150,000	75,000	38,000	37,000	- 0 -
Total	\$5,842,700	\$1,565,700	\$1,396,000	\$1,454,000	\$1,427,000

B. PROBLEM

The Coast Guard as a whole is currently in the process of a service-wide systems study. Entirely new information formats and sophisticated computerization of old transaction methods are being implemented. New hardware is being purchased. As far as the districts are concerned progress appears fixed somewhere amid the systems implementation phase. (See Figure 2 and Section C for further explanation.) The current Coast Guard data processing configuration is computerized with a centralized data base residing at Coast Guard Headquarters in Washington D.C. Presently each district office has a very limited access to this data base via terminals. For example the 12th District in San Francisco is operating at the input stage only. Little if any direct retrieval is gathered via their on-line terminal. Nevertheless, Headquarters and the districts still generate data, either computer formulated and processed or manual. Utilization of the old accounting machines for local processing is prevalent. It is this data that the Program Manager must evaluate, classify as to its informational content, and use for his decision processes.

Coupled with this changing computer system is the implementation of an entirely new financial concept. In 1970 the Coast Guard implemented a new internal cost-based operating budget system. The Subhead 30 system was viewed as an improvement over prior systems, as indicated by Commandant Instructions 7132.7A dated 10 Feb. 1972, in that it:

THEORETICAL SYSTEM DESIGN PROGRESSION

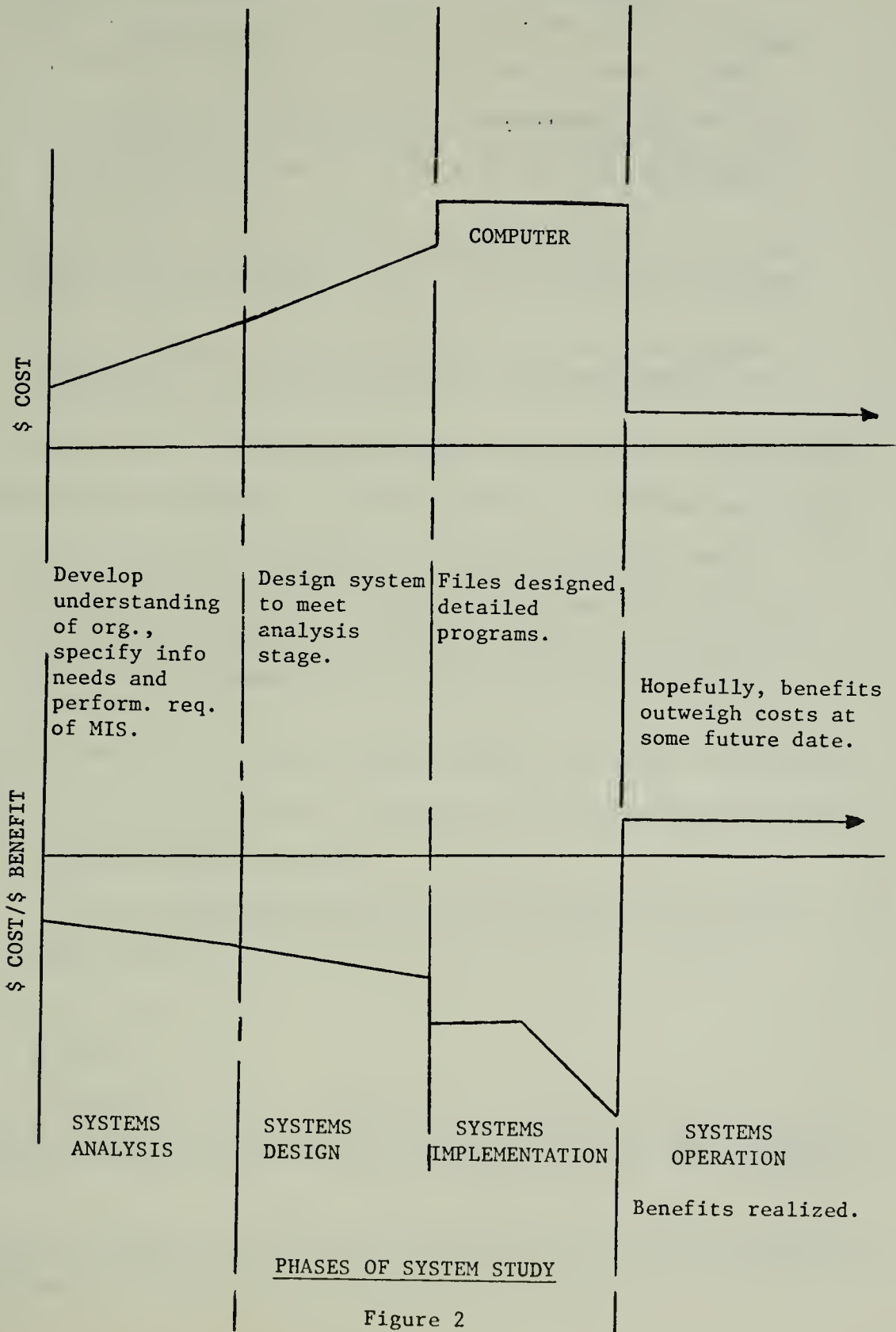


Figure 2

1. "Resulted in management at all levels becoming cost conscious.
2. "Established a single fund for use of an OPFAC (Operating Facility) unit in lieu of many funds.
3. "Resulted in granting to individual OPFAC unit commands greater discretion and responsibility for the effective economic utilization and management of his activity.
4. "Reduced the support managers workload for routine fund management tasks associated with funding small routine items.
5. "Increased and heightened the role of program managers in the budgeting and fund management or financial process."⁵

The area of financial management has been affected by these basic changes. In his thesis A. L. Henderson states:

"The new management organization must have a solid base of information. The tremendous costs associated with the technological revolution have increased the level of concern for accounting systems which will provide both financial and non-financial information to managers at all decision levels."⁶

As relates to the Coast Guard, LCDR J.F. Otranto points out that one of the critical problems in the Management Information Systems (MIS) area is:

"Most program/support managers have not defined nor are attempting to identify all their information needs."⁷

⁵ Ibid, p. 1.

⁶ Henderson, A.L., The Impact of Computerization on the Design of Accounting Systems in the U.S. Navy Supply System, Masters Thesis, The George Washington University, 1972, p. 2.

⁷ Otranto, J.F. LCDR, U.S.N., The USCG, 1972, An Opportunity for the Dynamic Application of Information Technology, A report submitted in partial fulfillment of the course requirements of seminar in MIS 55.760, p. 35.

It is the deficiency in the area of Program Managers information requirements that needs close examination. Specifically the bulk of these are problems encountered by a Coast Guard Program and Assistant Program Manager in making Subhead 30 budgetary decisions. These are also the problems arising within the information system utilized by the Program Manager in substantiating their decisions.

C. OBJECTIVES

In an attempt to update its data base management process, the Coast Guard has provided terminal access devices to each district office except Alaska and Hawaii. These devices, which are linked to a central computer in headquarters, will be used for a variety of transaction orientated programs (JUMPS, ICP, FINAIDS, SANDS, etc.). It is believed that the information being gathered for the FINAIDS (FINancial Automated Data System) transaction system could be and should be used to complement the information necessary to form a management information system.

In designing a MIS, a systems study normally is the first step toward successful future operations. Costs are outlined against the benefits to be derived. Figure 2 presents a graphical analysis of such a study, further broken down into its four phases; systems analysis, systems design, systems implementation, and systems operation.⁸ The benefits

⁸ Martin, E.W., Jr., and Perkins, William C., Computers and Information Systems, p. 256, Irwin, 1973.

in any effective design should ultimately outweigh the costs. The design and implementation of any MIS is a difficult and time consuming task, even for an expert. It was not hoped, nor was it attempted, to design or suggest a design for a Coast Guard MIS. It was hoped however, that based upon interviews with certain Coast Guard Managers and a basic knowledge of management information systems, some constructive suggestions could be made. These suggestions are in the areas of: (1) information needed and (2) format for presentation of this information.

The intent of this thesis is to review the decision process of a Coast Guard Program Manager or Assistant Program Manager, as applicable, and analyze the information system he currently utilizes, in an effort to classify this system as truly an effective MIS or merely a transaction system combined with management "rules of thumb." It is intended that this study generate more input requirements for a headquarters data base to aid the field Program Managers when they seek specific information via their terminals.

Perhaps more important than any of the previously mentioned objectives is the value to be derived from any information audit. This research was an audit into the Subhead 30 budgetary processes of Program Managers. It is felt that the laying of the groundwork for future, more detailed studies and the highlighting of problem areas, is a major contribution to the Coast Guard's financial management function.

D. ASSUMPTIONS

- 1) That Subhead 30, although a relatively new system, has become a permanent fixture.
- 2) That increased emphasis will be placed on the budgetary process and its associated benefits.
- 3) That, due to the complexity of the financial operations and the increased need for decentralized control, an MIS must exist at the program manager's level.
- 4) That for this MIS to be beneficial, those managers who will be using it must have a major input into its information content.
- 5) That all Coast Guard program and assistant program managers will have similar information requirements.

E. SCOPE AND LIMITATION

The research consisted of an initial investigation of the Program Manager's function through personal interviews, and a review of primary and secondary source material. The interviews were carried out on four separate occasions at a single district office. On each occasion a different set of managers was interviewed. (Appendix A contains a listing of the Program Managers and their speciality areas.) Primary and secondary source material was obtained through a literature review at academic institutions available to the writers, through facilities within or serving the Coast Guard, and from the operating managers themselves.

The research effort concentrated on one district office and a reliance on secondary sources for material from Coast Guard Headquarters. The investigation of a single district office is not considered a critical shortcoming. Upper management of the Coast Guard requires unification of data submitted by Program Managers and therefore the assumption of similarity between Program Managers appears valid. The limitation of secondary source material from headquarters has been the most difficult problem to cope with. It has caused considerable consternation in interpretation of directives and instructions (a problem also faced by Program Managers).

F. RESEARCH METHODOLOGY

A research plan was developed to assure a logical progression toward accomplishment of thesis objectives. It encompassed the collection and perusal of background material consisting of primary and secondary information about Coast Guard operations and management information systems. Through the use of this material a list of general questions was developed to (1) act as a guideline during interviews; (2) assure accomplishment of research objectives; and (3) assure uniformity of interviews.

Interviews were conducted with various Program Managers and Assistant Program Managers to ascertain their understanding of, and problems with, the system. Intermingled with these interviews was a further assembling of source materials and a resolution of data collected. A final analysis was

performed for the purpose of making recommendations and conclusions.

III. APPLICATION OF MANAGEMENT INFORMATION SYSTEMS IN THE COAST GUARD

A. INFORMATION SYSTEMS IN GENERAL

The term "Management Information System" has been defined, redefined, rearranged and disassembled in recent years. There are as many explanations of just what an MIS is and is designed to do as there are competent managers who have devised a personal method of decision analysis. Another definition or MIS objective will not be added here. Rather, by considering several of those descriptions provided by experts over the years, hopefully a statement as to the objectives of a system applicable to the United States Coast Guard today, can be developed.

Leonard I. Krauss, in his book Computer-Based Management Information Systems, provides several objectives which could apply to any MIS. For instance, "to collect and make available such information as is needed by management to run the business," or "to improve overall operations by providing management with decision information that is accurate, up to date, and rapidly accessible."⁹ Another extremely appropriate definition might be to provide management (decision makers) within an organization with information which reduces the degree of uncertainty in the decision process.

⁹ Krauss, Leonard I., Computer-Based Management Information Systems, 1st ed., American Management Association Inc., 1970, p. 76-78.

By an extension of these ideas and an adaptation of the theory of, "not looking at what we have to see who needs it, but rather looking at what is needed to see how we can supply it," an MIS adapted for Coast Guard use should have the following objective; improvement of overall operations through effective use of resources and manpower as provided by (1) readily accessible information concerning cost effective operational applications, and (2) up to date input/output relationships for operations, staffing and budgeting.

In consideration of the objectives of a CG MIS which we have just disclosed, an interesting dichotomy arises. The information which must be provided is often lost amid the abundance of data submitted/collected throughout any given period. Managers more often suffer from an abundance of irrelevant data than from a deficiency of relevant information. The problem is aggravated by MIS designers asking the managers what they desire in the way of inputs into the data base. The manager must first understand all the decisions which he must make before he knows just what input he needs; even then he may not know what he needs or be able to articulate it. Combined with this problem is the designer, who normally knows less than the manager, adding his inputs so as to try and cover any open areas he perceives. Thus, more irrelevant data is generated. Even should the system be well-designed and the manager have all the relevant information at his disposal, there is still no guarantee that the proper decision will be made. It can only be stated that

the choices will be made more clear and open to managerial analysis. However, an MIS should never be made operational prior to the proper indoctrination of the cognizant managers, lest the MIS become the dominant force in the organization.¹⁰

In the same context of trying to portray what an effective MIS is, let us also state what an MIS is not. A management information system (even a good one) is not a panacea for all of the kinks in the organization. The MIS can only provide information as per some prior instructions. It cannot perform the actual decision-making nor can it ever replace human ingenuity and common sense. It is simply a device for making the decision-makers' job as straight-forward and simple as possible.

Strategic Planning, Management Control, and Operational Control; these subprocesses of a managerial process as defined by Robert N. Anthony several years ago are generally regarded as areas to be serviced by an all encompassing MIS. Strategic Planning is defined as "the process of deciding on objectives of the organization, on changes in these objectives, on the resources used to attain these objectives, and on the policies that are to govern the acquisition, use, and disposition of these resources."¹¹ Management Control is

¹⁰ Ackoff, Russell, L., "Management Misinformation Systems," The Institute of Management Sciences, p. B147-B156, December 1967.

¹¹ Anthony, Robert N., Planning and Control Systems; A Framework for Analysis, Boston, Division of Research, Graduate School of Business, Harvard University, p. 16-18, 1965.

"the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organizations objectives."¹² Operational Control is "the process of assuring that specific tasks are carried out effectively and efficiently."¹³

These three subprocesses each contain certain characteristics as exhibited below:¹⁴

1. Strategic Planning Process

a. Generally external data

- (1) Market Analysis
- (2) Technological Developments
- (3) Government Actions
- (4) Economic Data

b. Trends

c. Predictions

2. Management Control Process

a. Control

- (1) Internal Information
- (2) Summarized Historical
- (3) Comparison to Objectives
- (4) Organized by Responsibility

¹² Ibid., p. 16.

¹³ Ibid., p. 17.

¹⁴ Dearden, McFarlan, and Zane, "A Framework for Management Information Systems Design," Managing Computer Based Information Systems, 1971, p. 17.

- (5) Monetary
- (6) Rhythmic Reporting
- b. Decision Making
 - (1) Trends, Predictions and Historical
 - (2) Monetary and Non-Monetary
 - (3) Special Studies and Rhythmic Reporting
 - (4) Data Organized by Products and Markets

3. Operational Control Process

- a. Precisely Measured
- b. Able to be Programmed
- c. Often Non-Monetary
- d. Basically Logistic and Product Data

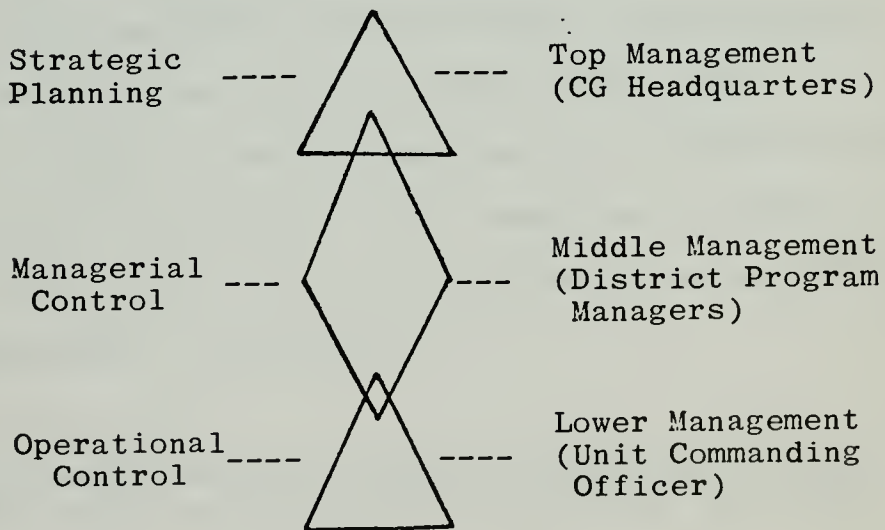


Figure 3

Figure 3 shows how top management is primarily concerned with Strategic Planning but does exercise some Managerial Control.¹⁵ Middle management, on the other hand, is largely involved with Managerial Control with some delvings into the Strategic Planning and Operational Control areas. Lower management finds the majority of its time spent on Operational Control with some participation in the Managerial Control area. This information triangle correlation provides an interesting insight into the use of an effective MIS. The same information is used as the basic input for all three levels of control. The degree of summarization delineates between the levels. Whereas at the operational control level the information is detailed and basically transaction oriented, the information which ultimately reaches the strategic planning level is condensed, gathered over a long period, and utilized for long range decision making.¹⁶

It is felt therefore that any attempt at designing an effective MIS must serve each of these subprocesses. Yet care must be taken, as each subprocess is an entity in itself. Broad statements pertaining to one cannot be presented as applying to all. Nor can too much attention be bestowed on any one subprocess in particular.¹⁷

¹⁵ The concept for this figure, to describe Anthony's three subprocesses, was originated by CDR Tom Tate, USN.

¹⁶ Martin, E.W. Jr., and Perkins, William C., op. cit., p. 46-48.

¹⁷ Dearden, McFarlan, and Zane, op. cit., p. 18.

of management first, progressing upward. However, it is also possible that the goals of lower management differ greatly from the needs and requirements as seen by top management. In this case, the bottom-up approach could impede progress or inhibit a much needed change. The biggest drawback to the bottom-up approach is that often, information is collected with no real sequence or ultimate goal in mind, thus the organization ultimately stalls.

Under the top-down approach an overview of the ultimate goals of the organization is generated initially. Thence, beginning with top management, the perspectives of each successively lower level of the management hierarchy is fitted into the grand plan. Managements information needs are filtered out at each level of input. Theoretically, this process should yield a form of an MIS skeleton to be smoothed out later. This approach generally has the advantage of meeting organizational conflicts on a more timely, straight forward basis.

The main organizational drawback to this approach is the impact on the personnel area. Lower management levels do not have the sense of participation that is apparent under the bottom-up approach.¹⁹

¹⁹ Krauss, op. cit., p. 77.

If these management subprocesses are understood, then the management process of the organization in question can be unveiled. Questions as pertaining to the management process can be asked as keys to a systematic development. Such as: (1) What decisions are made? (2) Who makes these decisions? (3) When and how often are they made? and (4) What facts are inherent in these decisions?

It should be noted here, that too often system designers feel that they can develop a MIS without regard to the management system currently in force. This is a fallacy. Strong methods for planning and control, firm structure, and adequate organizational goals all form the backdrop for any attempt to install an effective MIS.¹⁸

Many decision points now arrive in the consideration of an appropriate MIS. A key decision would appear to be the MIS development from either a top-down (strategic planning level) or a bottom-up (operational control level) orientation. Each has its assets and drawbacks as have been delineated by experts down through the years.

The bottom-up approach can generate masses of information relevant to the system prior to reaching the echelons of top management. Perhaps then, top management can be influenced by the views of others in its implementation of an MIS. Systems needs and inputs are specified from the lower levels

¹⁸ Murdick and Ross, "Information Systems and Management," Information Systems for Modern Management, Prentice-Hall, pp. 159-162.

B. FUTURE AS PERTAINS TO COAST GUARD MIS

Drawing on a research paper provided by LT Nicholson in May of 1974,²⁰ it becomes readily apparent that the Coast Guard will soon have to compete with other members of the Department of Transportation (DOT) for access to computer services. The executive decisions made by DOT in 1973 to consolidate administrative ADP activities and to consolidate the equipment of the Federal Highway Administration, USCG, Federal Aviation Administration, and Federal Rail Administration cannot help but have an uncertain effect upon any Coast Guard computer based MIS operations.

At present, it is felt that the Coast Guard would be hard pressed to submit computer programming requests that would yield effective MIS support to the budgetary decisions of a district Program Manager. Much work in designing an acceptable data base for use by Program Managers is needed prior to implementation of a centralized DOT processing facility.

The MIS currently in existence in the CG as described in a research paper by LCDR Otranto in August of 1972 (the author admitted that the term "Management Information System" was used loosely) are in our view basically transaction oriented systems, not management information systems. They are accumulations of data, centrally stored. Data of this

²⁰ Nicholson, Craig M., The Coast Guard Data Processing System, Paper submitted for Data Processing Management course at the Naval Postgraduate School, Monterey, Calif., 30 May 1974, p. 7-8.

type must be massaged and co-ordinated into a functioning data base prior to consolidation within DOT so that the CG has a firm grasp of its ADP position, with respect to any MIS involvement.

The day of management by intuition is all but gone in corporate industry. Soon the end will be in sight for Coast Guard Program Managers as well. Now is the time for implementation and extensive training in the use of a computer based management information system for use by Program Managers.

C. CONSIDERATIONS OF COAST GUARD MIS FOR PROGRAM MANAGERS

As previously stated, any attempt at designing an effective MIS must first take into account the management process currently in force as well as consider the three managerial subprocesses of Strategic Planning, Management Control, and Operational Control. In viewing the district Program Manager we perceive a middle management situation with basically a management control responsibility. However, although Headquarters provides strategic planning for all of the programs in the Coast Guard, the Program Manager must insert some degree of strategic planning into his own program. Each level of the CG hierarchy can be considered as an entity in itself as relates to the three management subprocesses. In order for a program to be effective, economic and useful, the Program Manager must plan each aspect of operations well into the future. Headquarters has neither the funds nor the technical competence to deliver strategic planning services

to each district's individual programs. Indeed, even some operational control must be implemented at the Program Manager level under certain conditions (i.e. program budgetary control as a part of the entire CG budget). Basically, Program Managers appear to utilize the top-down approach to managerial control, often prevalent in the military. The Program Manager attempts to operate his program within the confines of the limits imposed by Headquarters. The units often have little say in the budgetary process, although means are available for presenting their views toward various alternate measures of budgetary distributions. Only seldom however, did units under the Program Managers interviewed attempt to change their allotted unit budget for a period.

This is the atmosphere currently existing in the budget arena. It is into this management process that an effective MIS must be implemented. An MIS that can be designed to improve the overall operations of a program through an effective use of resources and manpower by the Program Manager. The MIS must provide the Program Manager with readily accessible information to be used in decision making within the realm of a Program Manager's responsibility. It is this information, provided in chapter IV, which we feel is needed in any MIS designed for utilization by a Program Manager.

However, should consideration be given to the design of such an MIS, the following pitfalls should be considered and avoided.

D. PITFALLS OF COAST GUARD MIS

There are three separate areas that must be considered when delineating pitfalls: (1) Planning Stage, (2) Designing Stage, (3) Operating Stage. In each of these stages are numerous concepts to be considered. As relates to the Coast Guard however, not all of these concepts apply. Outlined below are those which interviews and research have indicated are applicable.

1. Planning Stage

In the planning stage the number one criteria is selling management on the needs and benefits of an MIS. This can be done through "Goal Congruence," "Management by Objective," or any number of modern techniques employed to involve all phases of management. In the military this concept takes on significant importance due to the rotation of personnel through assignments. When an individual will only be in a job for three or four years it is extremely difficult to get him "motivated" and keep him informed when he is not actually on the job.

Another important concept, which has been previously discussed, is a comparison of costs and benefits. (See Figure 2.)

Finally there is the problem of accepting present procedures as ideal and trying to plan an MIS to fit them. This is exceptionably critical in an organization (such as the military) where "tradition" is a practiced procedure.

2. Designing Stage

One of the main concepts in this stage is the computerization of transaction orientated systems. This is a system whose main function is to receive, store, and transmit data but not to process it. This type of system does not present information in a format that is desirable for an MIS. Transaction systems data may be combined with other data or it may be massaged in such a way that it does present useful MIS information. Characteristics of a transaction system are a low quality data base and mechanization of clerical operations. An MIS usually is distinguished by its ability to indicate trends.

Two of the more popular pitfalls are using the "kitchen sink" approach and putting hardware before system design. In the kitchen sink approach all data, whether relevant or not, is included in the data base. In putting hardware before systems design equipment is purchased and installed before it has been decided what the objectives of the MIS should be and what resources are necessary to accomplish these objectives.

3. Operating Stage

In the operating stage there is only one major concept. This is a lack of ability on the part of management to use the tools available. This can stem from a lack of confidence in the data base or a lack of understanding of the system. Both of these misunderstandings can be alleviated by a total involvement of management (the users) in the planning and designing stages.

IV. BUDGETARY PROCESS: OVERVIEW

A. THEORETICAL BUDGET FLOW

Through a maze similar to that of any government agency, funds previously authorized through Congressional appropriation are channeled through the Department of Transportation, to the Commandant of the Coast Guard. Normally, about forty-five days into the new fiscal year, the funds reach the twelve districts and fifteen Headquarters units. As a district office is operated through varied programs, the available funds must be allocated by the District Commander to the current district Program Managers.

As with most government agencies, the funds reaching the district level are interspersed among several different headings, or in this case, subheads. This thesis deals solely with the subhead 30.00 funds.

The Program Manager is responsible to the District Commander for the overall management of his program or in this scenario, overall management of his program's subhead 30.00 funds. Thus, the proper budgeting of these subhead 30.00 funds is a key toward successful management of the program.

It should be noted that the Chiefs of the Engineering, Comptroller and Personnel Divisions in the District Office are considered Program Support Managers and as such are responsible for providing technical advice and guidance to the Program Managers in the area of their own expertise. (These

same relationships exist at the Headquarters level between the counterparts to the district Program and Support Managers.)

The responsibilities of the Coast Guard Program Manager and Assistant Program Manager as relates to the budgetary process are quadruple in nature. (1) Initiation of the Budget Cycle by submission of a list of operational changes for his units during the budget year. This list contains additions/deletions to the past year's budget based upon the PM evaluation of changes in his program. Information concerning these changes may be received either from the unit itself, other district managers, or higher authority. (2) The next involvement occurs as a result of the suggested unit budget (hereafter called a target) submitted to him by the district comptroller. This target has been compiled by the comptroller based upon the future requirements of the unit as projected by the Program Manager, past operating costs, and funds to be made available by Headquarters. The PM must examine these targets and determine if it is feasible for him to carry out his assigned responsibilities. (3) After the unit has had a chance to review the projected target, any problems that the unit Commanding Officer (CO) foresees are brought to light. The district comptroller, the Program Manager, any Support Managers, and the unit CO review these new problems and arrive at a finalized target. (4) All finalized targets are consolidated by the comptroller and submitted to the PM for final review and approval. Since

these consolidated reports are to be submitted to Coast Guard Headquarters, the PM must insure that he understands, agrees with, and can justify all information presented. This ends the PM involvement with the planning phase of the budget. There are however other functions of budgeting in addition to the planning stage. (See Appendix B.)

Once the budget has been approved and funds are authorized, it is the responsibility of the Program Manager to make all necessary adjustments to compensate for changes in the target amount. This means that the PM must have a priority listing that enables him to reallocate funds among his units as necessary to compensate for discrepancies between target amounts and funded amounts.

Finally, it is the responsibility of the PM to continually evaluate actual unit operations against budgeted operations. In this manner the Program Manager can judge the efficiency of each operating unit. This evaluation should allow the PM to foresee any financial problems that might occur and to solve them before they become critical. An example would be the recent fuel price increases during which the APM responsible for the Aids to Navigation Program should have foreseen problems in the area of funding for fuel for his buoy tenders. By foreseeing the problem, he could attempt to reallocate funds to cover the increased fuel costs or he could alter fuel consumption by changing operations. In all cases a close analysis of actual costs vs. budgeted costs can be an excellent predictor of possible crisis areas.

An attempt will now be undertaken to disclose the decision processes at work when the Program Manager must prepare budgets of his program elements and of his own funds. These same decision processes are also at work when budgetary crises or unit budgetary evaluations are required.

From observations and data which have been collected through personal interviews, the Program Manager or often more appropriately, the Assistant Program Manager is responsible for five specific areas with respect to his program and its elements, as regards subhead 30.00 budgeting. It is among these five areas that the PM or APM will be called upon to perform most of his decision-making. It is for these decision areas that a Management Information System would most greatly benefit the PM or APM in arriving at quality decisions. These areas are as follows:

- 1) Analyze alternative unit operations so as to present varying funding patterns should the need arise to cut costs.
- 2) Review and approve amount of suggested target for each operating facility in program.
- 3) Establish priorities among projects and maintenance programs in other subheads, should the need arise to supplement subhead 30.00 funds if operating shortages develop.
- 4) Responsible for overall management of program solely to the District Commander. Exerts overall control and coordination of funding for the program.

- 5) Evaluate funding pattern for individual units in program to ascertain cost-effectiveness.

If is from among these areas that the Program Manager is periodically pressed to make decisions. Realism must be considered here, as the above listed areas of responsibility are purely ideal.

B. EXAMINING INFORMATION REQUIREMENTS

In determining informational requirements of the Program Manager, an examination of each of the five aforementioned responsibility areas is required. The first area of responsibility concerns initiating a list of proposed changes in operations. Three types of information exists to assist the manager in this area. Initially, there is historical information concerning changes which have been implemented since the formulation of the previous budget. The funds necessary to continue these "new" changes should be easy to program since historical data exists as to their costs. In some cases funds are made available at the same time a change is implemented and an examination of these funds should result in a fairly accurate estimate of future costs. Information existing for the second type of change is not as well documented. This information concerns changes which are to be implemented for the present budget year. The funding in this area is based upon the detailed analysis of those persons involved in the proposed change and is at best, only an estimate. Usually the persons involved in this area are the unit CO, the district Program Manager, the Headquarters

Program Director, and the various support personnel. Their estimates are usually made after much deliberation and are based upon their past experiences and if possible, similar changes which have already been implemented. Since the information is only an estimate, it must continually be evaluated by the Program Manager. The third information source is really nothing more than a combination of the previous two sources. It involves changes that have been deferred from previous years for one reason or another. If these changes have not been started then they are no different from changes previously discussed. If however, part of the change has begun, then the Program Manager has both historical and estimated data to work with. In this case, an analysis of projected vs. historical funding is required.

The second responsibility area involves the review and approval of finalized targets. The target is composed of two parts: (1) future projections, which have already been examined, and (2) base. The base is that funding which, by previous analysis, is necessary to maintain a given level of operations at the unit. The difficulty which arises here is the lack of documentation of what data composes the base. The PM knows where funds come from, however they don't know how the exact figures in the base were arrived at. What has developed is that the Program Manager is unable to predict the consequences of a change in his unit's operations since he is unaware of whether it was considered in the base, or what relationship was used to determine the necessary funds

for continuation. About the only information available on the base is either the cost of changes implemented (as mentioned under responsibility area one) or the Program Manager's evaluation of the efficient financial operation of his units.

In establishing priorities, there is a central theme that the PM must continually keep in mind. That is, the overall contribution of a project, maintenance program, unit, or subhead, to the program. Cost must also be considered. Consideration has only been given those items which have been approved subject to their position on a priority listing. In this area, the ability of a PM to answer the "what if" type questions would display the effects of changes in the aforementioned areas of his program.

In establishing priorities among projects, the rigor lies in assessing their costs. These are usually new, one-time items thus cost estimation is extremely difficult. The benefits to be obtained are also estimated and not very accurate as a result. A final consideration is the future recurring costs to be incurred if a project is undertaken.

Priorities among units depends upon the redundancy of the unit. If there are several similar units or units that can perform similar requirements, then the priority of a specific unit diminishes. The capability of a unit to operate under reduced funding is also important. If the major program objectives can still be carried out with reduced funds, then the priorities are lessened.

Maintenance programs are usually the easiest to prioritize since historical costs exist which give relatively accurate funding requirements. Also, the implications of a cancelled or postponed maintenance program are relatively easy to predict. The final information requirement, replacement costs for assets which are no longer reparable, is not as easily prioritized.

A final area where priorities must be established is between the various subheads within a program. This is a combination of all of the previously mentioned information needs and will not be elaborated on further. Suffice to say that the funds in the various subheads are used for projects, units, and maintenance programs and it is these that must be ranked when establishing priorities.

In exerting overall control and coordination of funding within his program, the PM is concerned with the entire program, vice the individual unit. The most basic information needed is the total funding for a particular program. This includes all funds, not only those in subhead 30.00. Next, information concerning total funding for each unit is necessary. Information is needed as to recurring problem areas (i.e. where the discrepancy between budget costs and actual costs is large). Finally, information is needed to predict changes during the current year. This "what if" capability is again one of the most important assets that a Program Manager could have. It allows him to project his operations into the future and foresee possible crisis areas. This

gives him a chance to solve problems before they occur. It also allows him to view the results of various courses of action and choose the optimal method of attack. Finally, it enables the Program Manager to establish priorities among items by forecasting their overall effects.

The last responsibility area is a crucial one to both the Program Manager and to the Coast Guard. It concerns the efficient operation of the units under a Program Manager's control. Normally this is measured by periodic visits of district inspectors who report basically on the material condition of the unit. Combined with this is the manager's awareness of his unit's ability to carry out their prescribed functions. The major obstacle to this system is the lack of financial information being supplied. The Program Manager needs more than just budgeted costs and historical costs if he is to evaluate the efficiency of his units from a financial standpoint. He needs to know how they are spending their money, what they are spending their money on, and what they are doing with the items purchased. The improved financial operation of each Coast Guard unit should result in a cost savings and an increased potential for effective program operations.

C. BUDGETARY PROCESS IN OPERATION

In prior sections, the theoretical budgetary process has been defined. Utilizing information gained through personal interviews with various Program Managers in the Twelfth

Coast Guard District, an attempt will be made to point out what information is currently available and what information Program Managers have indicated they use. It will become obvious from the start that this process is different from what has been previously outlined. In comparing the actual system with the theoretical system, there is no attempt to try to justify either method, but merely to point out those areas where improvements would be beneficial.

The process starts with the comptroller submitting to the Program Managers a recommended target for each unit's subhead 30.00 funds. The comptroller arrives at these figures from the previous year's budget and from the proposed subhead 30.00 allotment that Headquarters has indicated will be available for the budget year under consideration.

In analyzing these targets, the Program Manager or his assistant considers last year's target and last year's spending. If the proposed target compares favorably with last year's target, then the manager will accept the target. Recently however, more of an emphasis has been placed on increasing targets due to inflation. In comparing the targets the manager also takes into consideration any financial difficulties that the unit has experienced. He becomes aware of these difficulties through review of two separate reports submitted by the unit. (See Appendix C for a list of pertinent budgetary reports.) The first report, "Unit Quarterly Financial Program Report," indicates planned expenditures by the unit for the upcoming quarter. These expenditures are

ranked on a priority system based upon their contribution to the units prescribed mission. Also included on this form are unfunded projects/procurements and a justification for each. It is this section that is used by the Program Manager and his assistant when comparing the proposed target to the previous year's target. When a unit needs additional funds during the current year it submits a "Target Modification" form to the Program Manager. This is the second method by which the PM is informed of a unit's financial difficulties. The form tells him of the unit's need to transfer funds from a future quarter to the present quarter, of a need for emergency funds for unplanned/unforeseen circumstances, or a need for funds because of changed or increased operations. If any of these difficulties exist and the PM concurs with the justification given by the unit, then he will attempt to obtain additional funds. There are three methods by which he may attain these funds. First, he can obtain them from a contingency fund maintained at the district level. Secondly, he can obtain them from Headquarters, or thirdly, he theoretically can reprogram funds from other units in his program area. The first method is used to obtain funds during the current period, while the second and third are used for future periods. Under the first method, when the needed funds are small in amount, the PM attempts to convince the comptroller that he needs additional funds for his program. If the comptroller is not convinced or if the requirement exceeds the comptroller's limited authority,

then the district Chief of Staff must be persuaded to use the funds in his contingency account. In doing this, the Program Manager theoretically needs a clear, concise, well documented argument to present to the Chief of Staff. This means a reliable information system. The second method of obtaining funds occurs when the District Commander submits his "Subhead Summary of Budget Estimates (CG-4144)" report to the Commandant. (Although mid-year special requests may be submitted by letter.) On this form Program Managers request funds for those program changes that have previously been justified by and explained to the Commandant in detail. In these cases, the Commandant has already indicated favorable consideration. The target for the unit under consideration will be revised or not according to the outcome of the three previous procedures.

The target is submitted to the unit to inform it of proposed funds for the upcoming year. Although the unit may request modification, usually the majority of the changes have already been discussed and only a serious error will prompt additional considerations.

When actual funds are made available the Program Manager or his assistant compares them with the targets. If there is only a minor difference, no action is taken since the funds are passed on to the units by the comptroller as appropriate. If there are large differences, the Program Manager must decide which units are to be slighted. Using knowledge of his program, awareness of the individual unit considerations, and his past experience, the Program Manager allocates

funds to his program according to his own experience and feel for the problem.

As the year progresses, the Program Manager has four sources of formal information concerning his unit's financial operations. Two of these, the "Unit Quarterly Financial Program Report" and "Target Modification Report," have been discussed previously. The other two sources are generated from accounting information gathered by the district comptroller's office. The first of these is the weekly "Allotment Account Report" which is a listing of all unobligated funds by point accounts within each subhead. This is simply a checkbook balance type presentation. The second source is a monthly "Cost-to-Target Report" which shows actual vs. targeted costs for each object code at each unit. (For a listing of the various object codes that make up each subhead see Appendix D.) By using these four reports, the Program Manager attempts to ascertain if any of his units are in financial difficulty.

If during the course of the year an occasion should arise where additional funds are needed, the PM can attempt to obtain them from the Chief of Staff's contingency fund as previously related. If this is impossible then the Program Manager must decide for himself if he wants to shift funds within his program. Normally this decision is made solely on the basis of his past experience and intuition.

In summary, it is seen that the actual budgetary process is somewhat different than the prescribed procedure. It is

also evident that useful information is contained in the reports mentioned. It is not evident however, how much of this information is actually being used by the PM and how much of his own past experience and knowledge is utilized. The fact that some of his decisions are based upon instinct and past experience is in itself not entirely bad. It might be more acceptable were the same persons making the decisions from year to year. However, in an organization where personnel are routinely transferred every two to four years, documentation and regulation of certain procedures is necessary.

V. PLANNING THE BUDGET

In order for the Program Manager to make decisions within the five specific responsibility areas as delineated in section III-A, certain pertinent information is needed for reference. There should be a system. It has become apparent to the authors that the system used for management decision-making at the district Program Manager level, is anything but a smooth, polished Management Information System. Information such as input/output relationships concerning rising fuel prices, costs per unit per rescue case, aircraft utilization costs, life expectancy of large assets such as fire pumps, etc., are needed for planning purposes but not yet readily available to the Program Manager. Because the budgeting is done on a "base plus" method, information as to the content and breakdown of the original base for a given unit is desired. Once again, due primarily to rotational assignments of short duration, there exists little or no information regarding a unit's budget base which was generated five or so years ago.

A. INFORMATION REQUIREMENTS AS SEEN BY PROGRAM MANAGERS

The Program Managers perceived a need for some method of assessing not only funds spent, but also funds obligated. Currently, under an accrual type system, there is no provision for this data to be available to the Program Manager for periods preceding the current fiscal year. Further, the

computerization of each unit's budget base so that it would be properly documented and reviewed could provide for stronger budgetary controls. Referring to their responsibility for evaluating unit funding patterns, the Program Managers interviewed felt that some standard need be established for evaluation of unit budgetary effectiveness. Otherwise, it's simply a matter of each man's opinion as to what is cost-effective and what is not.

Thus, the Program Manager is left to base his decisions on the analysis of historical data. Often times, several conflicting sets of data are available for a given decision event.

One particular Program Manager interviewed had reported to his position only a month earlier and had no prior experience in this field. The fact that he was given no training, coupled with the fact that his predecessor kept few and disorganized records, enables one to appreciate the position of this new Program Manager. He was completely unfamiliar with the budgetary procedure and had little documentation of previous undertakings within his program. Documentation of the basic duties to be performed by any Coast Guard district Program Manager are also noticeably absent. The Program Manager feels most vulnerable in the situation of presenting his budgetary request to the Comptroller and Chief of Staff. With no past experience, no formal training and little documentation or explanation of historical costs incurred, the new Program Manager is expected to efficiently manage a substantial amount of allocated funds.

Associated with the ever-present complaint of Program Managers concerning lack of documentation, is the situation of recurring expenses which are inherent in a unit's budget base. In other words, funds that were allocated in previous years by Headquarters to meet recurring needs, were never documented. Over the years the funds were diverted to other needs perceived by the unit to be more critical. As a result, funds are requested by a new Program Manager or unit Commanding Officer for a recurring expense which has already been considered in the budget base. Through time accountability for the funds have been lost in the shuffle. The result, if it is caught by Headquarters, leaves a Program Manager holding the bag for something he knew nothing about.

Another area of great concern to the Program Manager is the failure of government supply sources to maintain any consistency in their pricing policies. Significant day to day variances in supply center prices make it extremely difficult to plan and control a program's budget. Expenditures cannot be effectively predicted from budgetary analysis when there is no apparent correlation in prices from day to day.

Price fluctuations of government supply sources and the military wide problem of the lack of timely notification of Fiscal Year budgets from Congress presents a difficult situation for a district Program Manager. As previously discussed, it is often over 45 days into the new Fiscal Year before a Program Manager is even somewhat aware of the actual funding amounts to be made available to his program. At

this point no breakdown has been made by Headquarters which assigns funds to programs. To confuse the situation even more, parochial interests at the Headquarters level initiate allotment changes before the actual allotment has ever been received by the Program Manager.

A final consternation of the Program Manager is in an area where he possesses some capability to ease the problem. Often the individual units within a program concern themselves solely with what they get instead of what they need in the way of funds. Strategic planning must be initiated, to some degree, at almost all levels of management if a program is to operate efficiently and effectively. The unit CO must plan his expenditures and needs as realistically as the Program Manager. However, this problem should be handled within the confines of the Program Manager's expertise. It is an internal problem. However the majority of the problem areas for information needs are external to a program. In other words, without some degree of correlation and availability of the information needed by the Program Manager, even the best manager will falter at some point. Thus, his program will falter also.

B. PROPOSED INFORMATION REQUIREMENTS FOR BUDGET PLANNING

It appears to the authors that the Program Manager and his assistant have no formal Management Information System as defined in the academic environment. The authors perceive the information needs to be similar in many aspects to

those perceived by the Program Managers for planning a budget. Those needs are as follows:

1) Input/output relationships are vitally needed on a rapid retrieval basis. The costs of operating a surface craft at varying speeds or the effects of cutting back on aircraft and pilot training need to be quantified and placed into an accessible data base. Many relationships are available now in one form or another. Others would prove very difficult to obtain. The centralization of as many of these relationships as possible would be a step in the right direction.

2) Each unit's budget base must be evaluated and documented in a manner conducive to future rapid retrieval. Proper documentation and justification of a unit's budget proposal should be required and stored for future retrieval by a new Commanding Officer or responsible executive. Facts should be stated clearly and not left to interpretation by future users. The information system should provide continuity. The question of what comprises the unit's budget base as well as what should be in the base should be answered. Recurring annual expenses must be identified and separated.

3) Although it would be somewhat desirable to extend tours of duty on all units so as to stabilize the budgetary process, it is impossible. However, a formal training program of several weeks duration undergone prior to assignment as a Program Manager or unit Commanding Officer as regards financial management, would alleviate some of the pressures.

Once the first group of Program Managers and unit Commanding Officers have undergone training and performed on the job, operational procedures, documentation and evaluation of the budgetary cycle should become more clarified and efficient. Only in this manner can reasonable budget decisions be made with regard to a three year rotation of personnel.

4) Further evaluation according to some preset standards is needed for the individual unit's budgetary process. Currently, virtually no attention is paid the unit as long as it remains within its total target. No apparent effort is made to require a justification of a unit's budget base; only increases over the base must be justified. This problem could also be eased by formal financial training of the Commanding Officer.

5) Relationships of life expectancy for higher cost assets, and records for accumulating time in service should be available to the Program Manager so as to be prepared for sudden "emergency repair" requests. Constant surveillance of aging assets is vital to any long run budget planning. For example, if a pump valued at \$1500 fails just prior to a rescue case, it must be replaced immediately. Frequent crises of this nature will destroy the best planned budget.

6) Price fluctuations, inherent in the Government Supply System, must be controlled or at least estimated in some manner. There is little need for inclusion of the applicable prices in the data base since published catalogs are readily available to the managers.

7) Availability of actual funding amounts must be made available to the Program Managers in a more timely manner. Congress is asking the various services (who in turn are requiring their managers) to perform in an atmosphere of bewilderment and frustration in which no one knows the level of funding he has available to perform his tasks. This problem however may be in the process of being alleviated. Currently, action is underway to change the commencement of the government fiscal year from July to October. This action would provide Congress with substantial leeway in getting budget allocations to the services. Of course, problems of enormous complexity will arise in the transition to the new budget cycle. A special three month cycle will have to be implemented (on a one time basis) in order to get the new system underway. This will require a degree of budgetary analysis hertofore unachieved, especially at the district level. The twelve month cycle tended to smooth out the fluctuations which will be prominent in any three month cycle. One cannot merely divide last year's budget by four. It goes without saying then, that should the new fiscal year dates come into play, the Program Managers will lose a substantial reason for any budgetary ineptness since funding levels should be known prior to the start of the fiscal year. True planning and long range budgeting will have to be exercised.

In the opinion of the authors, the areas listed above deserve serious analysis in terms of available information as regards the planning phase of subhead 30.00 budgeting.

VI. ADMINISTERING THE BUDGET

In administering the funds received from the District Commander the Program Manager has three functional areas for which he is responsible. First he must allocate the funds throughout the units comprising his program. Secondly he must oversee the yearly operations of these units to assure accomplishment of stated program objectives. Lastly he must evaluate the financial operations of his units to ascertain their cost effectiveness.

A. INFORMATION REQUIREMENTS AS SEEN BY PROGRAM MANAGERS

The most prevalent complaint expressed by the Program Managers was the receipt of obligational authority late in the fiscal year. Although this complaint was discussed under planning the budget, it takes on significant importance in the administration stage. Program Managers felt that it was paramount that they be informed of planned reductions as soon as possible. The reason this information is so vital is that a reduction received well into the fiscal year has a greater effect than originally forecasted. For example a reduction of 10% received half way through the fiscal year results in a 20% reduction for the remainder of the year. Therefore the Program Managers need information concerning the possible reduction of funds so that they can initiate compensating action early.

2.
In the second functional area Program Managers feel they only need to know when a unit has exceeded its target. This form of management by exception is not a desirable method of operating. The manager reviews periodic reports submitted to him which indicate how the unit has spent its funds as compared to its target expenditures. Not all Program Managers seemed concerned if a unit was overspent in one object code category provided the total expenditures were within target. For example when questioning one Program Manager it was noticed that a particular unit was 200% overspent in the housekeeping supplies category. When this was pointed out to the Program Manager he indicated that the unit was within its total targeted amount and therefore he was not concerned.

3.
The third area is by far the most critical and most influential. The Program Manager has no direct information concerning the cost effectiveness of his units. There is no standard definition of what constitutes effectiveness so the Program Manager has no standard against which he can rate the financial performance of his units. Also the Program Manager must decide how he is going to distribute reduced funds at the beginning of a fiscal year; which units will receive reduced funds and which will receive the original targeted amount. If additional funds are allocated he must decide which units are to receive the additional monies. There is really no quantitative common denominator for evaluating a unit's performance with respect to other units within a program. Currently this reallocation is handled by

intuition aided by such things as the District Inspector's evaluation of a particular unit and personal visits. The District Inspector's technique involves an inspection of the unit by a team of district inspectors composed of various personnel from the district office. These personnel are most knowledgeable in specific areas (i.e. a storekeeper to inspect inventories, a yeoman to inspect personnel records, etc.). If the unit receives at least a satisfactory rating and has not overspent its budget then it is assumed to be cost effective by the apparent current standards of most Program Managers.

B. PROPOSED INFORMATION REQUIREMENTS FOR BUDGET ADMINISTRATION

The complaint expressed by Program Managers concerning excess delays in obligational authority is a valid one. However it is felt that the managers themselves could lessen the impact and frustration associated with this delay by better planning. They could do this by formulating alternative budget plans to cover a reduction in funds. An effective MIS would be beneficial here as it would allow managers to predict trends. It would also allow them to predict the impact of various inputs (reduced funds) on their programs (outputs). Thus they would have information which could reduce the degree of uncertainty in the decision process.

The fact that a unit overspent in one object code should indicate the necessity for further investigation to the Program Manager. There are three reasons for this excess expenditure:

(1) The "target" was inaccurate, (2) Excess funds had to be spent to cover some deficiency or (3) Misunderstanding of object category by the unit involved.

If the target amount is inaccurate then the overexpenditure will probably be a recurring problem. If this happens then the unit managers lose faith in the target and it no longer serves a useful purpose.

If excess funds are being spent in one category then expenditures must be reduced in other categories. This should indicate to the Program Manager that the unit is either presently having a problem or is going to develop a problem in that area where the funds have been reduced. In either case further investigation is necessary.

If the unit managers do not understand the categories then they do not understand the system. In this case proper financial management cannot be executed and the unit is going to develop more serious problems.

It is apparent from the previous discussion and other information gathered from the interviews that the present information system is deficient. Although it does point out any overexpenditures it does not indicate what caused those ~~A~~ expenditures nor is the information readily available.

There is one aspect of the above analysis which should be considered. The monthly "Cost to Target Report," which supplies the information about object code expenditures, has a hidden flaw. The annual money for each object code is usually divided by four by unit CO's to give a quarterly

figure. This does not mean that the money is going to be spent uniformly throughout the year or even throughout the quarter. For example it may be necessary to perform major repairs early in the quarter (or year) and spend as much as 50% of the budgeted funds long before the quarter (or year) is half over. This does not mean that the funds have been misspent or that we are going to run out of funds before the end of the period. It only means that the expenditures were not uniform throughout the time frame. However the present system does not indicate this and therefore a Program Manager must evaluate each unit's expenditures in light of the remaining funds available. He has no way to determine if the funds remaining within the unit are sufficient for the balance of the period.

Determining a common index of effectiveness by which a unit can be evaluated is a difficult task. It requires that a common denominator exist between many diversified units. Care must be taken here to distinguish between indexes of performance and standards of performance. (For example, in private business, rate of return on investment might be the index of performance common to all product departments, but the standard in terms of this index might be 12% for one department and 25% for another.) One problem with the present evaluation system is that the Program Manager is forced to evaluate two distinct types of information. On the one hand he receives information (via the district inspectors) on his units' operations. This information is a summary of data

collected and interpreted by an outside individual (the inspector). Therefore it is subject to the shortcomings and prejudices of this person. The other type of information is received as raw data. These are the facts and figures relating to the unit's expenditures which the Program Manager must convert into useful information. After combining these two information sources the manager must attempt to evaluate the unit.

A second problem with the present system is the lack of documentation. The basic information is documented in the inspector's report and the various financial reports but the decision process of the Program Manager is not documented. This means that future managers will not be able to ascertain how present managers reached their decisions. An effective Management Information System would promote standardization. It would enable all managers to evaluate their units equally and to decide which units contribute most effectively to the overall program objectives.

VII. ANALYSIS OF CRITICAL PROBLEM AREAS

A. BUDGET BASE

The authors offer the following documentary procedures as possible considerations in identifying a unit's budget base at a later date.

1) Document the budgeted and actual expenditures of the previous Fiscal Year. List reasons of any variance between actual and budgeted expenditures. Break these expenditures into object codes prior to variance analysis.

2) Separate object code allocations into recurring expenses (such as funds provided annually for specific vehicle rental, or cutter maintenance funds provided especially for the rewiring of a ship's generators), and non-recurring expenses. Include telephone, dock rental, utilities, etc. with the list of recurring expenses.

3) Document fuel costs for required operations as per district operating schedule. Use historical milage and costs for projections. Adjust figures for current inflation index.

4) Document any costly one-time expenditures which might bias actual expenditure figures for any given object code.

5) Document any funds which have been requested from a higher source for future projects or recurring expenses, but have not as yet been approved.

6) Document any future high-cost asset replacements perceived by the command but for which no funds have as yet been requested.

7) Document all outstanding SHIPALTS, STRUCTALTS, etc. which may require future unit expenditure or prompt a request for funds from another source.

8) Document all required electronic expenditures, as opposed to routine replacement items, to properly maintain ERPAL or other electronic allowances.

9) Document any other expenditure of either a recurring or non-recurring nature if the command can perceive a future need for retrieval of the information involved.

It is felt that should documentation of expenditures comprising a budget base be initiated in a manner similar to the procedures expressed above, the budgetary analysis of future Commanding Officers or Program Managers would be simplified.

B. BUDGET ADDITIONS/DELETIONS

When a major change takes place within a program necessary additional funds are authorized by Coast Guard Headquarters. (This authorization is received on form CG-4144 "Subhead Summary of Budget Estimates.) For example, if three new large navigational buoys were to be placed along the California coast then funds would be authorized for this project and for the future maintenance of these buoys. Currently these funds would be incorporated into the command's budget base.

The previous section indicated a possible method of documentation for the budget base. Once this has been accomplished it becomes equally important to document additions

to or deletions from that base. If this is not done then the budget base will contain incomplete or inaccurate information.

One possible reason that a unit runs into financial difficulty is that the funds authorized for major changes may be insufficient. Usually the amount of these funds is only an estimate and there is no guarantee that it is accurate. Without proper documentation as to the exact cost involved in both the initial installation and the continued maintenance it is impossible to tell whether the amount allotted was sufficient or not. The unit or the Program Manager would not be able to state exactly what it would cost to complete the project or what the future costs would be. This documentation would enable additional funds to be requested to meet a specific need. It would also satisfy the requirement for documentation of recurring expenses.

C. MANAGEMENT CONCEPTS

In Chapters II and III we briefly mentioned the concept of top-down/bottom-up management. The top-down approach appears to be the most widely used in analyzing an organization for MIS purposes. It involves viewing the entire system as a whole and concentrating on the long term perspective. One concept invisions the system as a black box and the inputs and outputs of this box are analyzed first. The box is then opened up to find out what processes are taking place. We find that there are many smaller black boxes inside representing components or subsystems. The inputs and outputs

of these, their interrelationship, and their processes are then analyzed. In this manner the design of the management information system takes into account the major objectives of the organization and does not get diverted to less important matters.

In the bottom-up approach great quantities of information are gathered at the lower levels of an organization. This results in a good understanding of present conditions and current problems. However, so much information is gathered that in trying to piece it together no major objective or goal is discernible. Thus the Management Information System has no central direction or theme and the organization will have difficulty functioning with it.

It appears that the present Coast Guard system was designed using the top-down approach. Headquarters indicated to the various district offices the information requirements and formats it desired. The districts in turn indicated to their various units the same requirements.

The Comptroller indicates to the Program Manager, who indicates to the units, the targets in the various object codes. The Program Managers tend to interpret what the Comptroller tells them as gospel. That is, they feel that he knows approximately how much money is going to be available for the current year and that his targets are explicit rather than implicit information. With this impression they then try and budget their program objectives into this targeted amount. The same conditions exist at the unit. They

feel that if two levels of upper management (the Comptroller and the Program Manager) have arrived at the targeted amount then that must be all that is available for operations. It is true that the unit COs are told that they control the funds and can spend them in any manner they desire but when the Program Manager then says that if you cannot perform your assigned mission we will examine your spending patterns, the COs can only feel safe when they stick to the targeted amounts. That way if they cannot perform they can always blame it on the targets which they did not really develop.

The top-down approach may be good for designing a Management Information System but it is ineffective in operating that system. As was just pointed out there are problems with this type of operation. The lower levels of management feel that they have no say in the budget process. They feel as if they are being told exactly what funds they will receive and how they must spend them. When a unit does take the initiative it can result in overspending in some object codes and underspending in others, thus making the unit look bad.

A better system would be for the Program Managers or Assistant Program Managers to work directly with the unit Commanding Officers in developing suggested targets. They could discuss each object code separately and decide what funds should be spent and in what priority. In this manner the COs would feel that they had some influence on how their money was distributed. In arriving at the suggested targets

both the Program Manager and the CO would have a firm grasp of the targeted amount in each object code. This information could then be passed on to the Comptroller for summarization into the total district budget.

When the funds actually are allocated to the Program Manager he and the CO could make the necessary adjustments if the funds differed from the original target. Each would understand exactly what expenditures would have to be adjusted, what the current overall effects on the total program would be, and what future actions would be necessary.

When the "cost-to-target" report indicates that actual expenditures are not conforming to budgeted expenditures for individual object codes, the Program Managers should have a better concept of what is happening than he got by just looking at the total expenditure column. He would know what effect this adverse spending would have on his total program and perhaps on the other units within his program. He could talk with the unit CO and find out what caused the adverse expenditures and, since they developed the target together, they should know whether this expenditure was justified or not.

Another advantage to this system would be that it would make the budgeting job of a new CO or Program Manager much easier. The possibility of having a new Program Manager, Assistant Program Manager, and CO at the same time is remote. Therefore there should always be someone available who understands how the current budget was arrived at and who can be of assistance when working on future budgets.

Finally the documentation under such a system would be more exact. Records would exist at both the unit and the district as to what items were considered in each object code. This would enable future CO's or Program Managers to tell exactly what items had been previously budgeted.

VIII. IMPLEMENTATION OF INFORMATION REQUIREMENTS INTO A WORKABLE MANAGEMENT INFORMATION SYSTEM

The information requirements as conceived by the authors and presented via the overall budgetary planning phase and the more technical administration phase of chapters V and VI, need to be visualized in a manner conducive to later entry into a data base for use by Program Managers. The information inputs to be defined are not intended to be all-inclusive. However, an attempt was made to focus on as many of the critical areas as possible as a prelude to an effective data base for any future Coast Guard Management Information System.

A. FORMAT DESIGNATION

In consideration of future design of a Management Information System for use by Program Managers, a presentation will be delivered here as to a seemingly acceptable format for the inclusion of information requirements discussed previous into a suitable data base. This system is presented in figure 4. Desired information inputs into a data base are listed. All of the inputs considered have been discussed at length earlier in this thesis, and in the opinions of the authors can be gathered from the field on a demand basis. Some of the inputs are available now, while others would require some degree of effort in assembling and quantifying. The processing steps of the proposed MIS is listed next.

INPUTS	PROCESSING	OUTPUTS
Input/Output relationships for operations (i.e. fuel/mile cost, accounting for inflation, A/C training/cost trade-off). (DEMAND)	Effects of using varied resources for a given activity.	Schedule of cost/benefits incurred by decreases in given resources. (DEMAND)
Documentation of individual unit budget bases. (DEMAND)	Yearly analysis/update of unit budget base for "base-plus" budgetary evaluation.	Yearly display of budget base inputs per unit. (PERIODIC)
Documentation of unit historical costs as they occur (i.e. why/how it cost \$2000 to replace engine in 210 foot cutter). (DEMAND)	Effects of performing given repairs or replacement on overall budget.	Status of high cost assets (i.e. age, utilization percentage, downtime, etc.). (TRIGGERED)
Replacement schedule for high cost assets on varied units. (DEMAND)	Effect of outdated equipment on unit's current budget request.	Report of inefficient budgetary methods. (TRIGGERED)
Quantified indexes for use by inspectors in evaluating unit budgetary procedures. (DEMAND)	Effect of unit's budgetary efficiency.	Schedule of alternate operations vs. cost. (DEMAND)
Varied operational patterns for each unit quantified for cost/benefit. (DEMAND)	Effects of cutbacks/enlargement of unit operations.	
Clear, concise documentation of Program Managers' decisions. (DEMAND)		

Figure 4

These steps are necessary to produce the desired outputs which are indicated in the final list. Each output would be subject to retrieval via one of several different methods. These are (1) a demand report (a report which is produced on the request of a user - an example would be a Program Manager requesting the current expenditures of one of his units to date), (2) a triggered report (a report which is produced when a preset event occurs - an example would be when a unit overspends its budget in a given area, a report would automatically be generated to inform the Program Manager of the situation), (3) periodic report (a report which is generated on a periodic basis - an example would be a yearly status report defining a unit's budget base components). Assigning varied retrieval methods to pertinent reports saves time, paper and confusion resulting from masses of irrelevant data generated when all outputs are of the periodic form. The manager will not be buried in computer printouts which usually result in minimal transfer of real information. One report in time of need is worth more than receiving 100 periodic reports.

While referring to figure 4 an attempt can be undertaken to classify the information inputs as follows:

CATEGORY 1 Information collected and now accessible to the Program Managers.

CATEGORY 2 Information collected but not now accessible to Program Managers. (Either the information has not retrieved from the data base or else it has been

retrieved but is presented in such a manner as to be useless without excessive massaging:.)

CATEGORY 3 Information which has not been collected and therefore is not available at present.

Referring now to Category 1, regarding information collected and currently accessible, we find that information on a per unit basis exists for total fuel costs (see Cost to Target Report - Appendix C), total miles traveled (available on Unit Abstract of Operations), quarterly training costs (see Cost to Target Report - Appendix C), and total operational costs (see Cost to Target Report - Appendix C). However, the input/output relationships relating fuel costs to miles traveled or relating training cost to operational cost tradeoffs fall into the category of information collected but not accessible to Program Managers in its present form.

Another example would be the unit budget base. Information is currently collected and available regarding current unit expenditures but documentation of the inputs into the budget base has not been undertaken and thus is not available to the Program Manager (see Weekly Allocation Record - Appendix C).

The authors suggest that many of the inputs listed in figure 4 can be computed with little effort. For example the cost of large asset replacement is known (Target Modification or Unit Financial Plan - Appendix C). At present, however, this is all that is collected. With a little research, the time interval between similar asset replacements

on a single or entire class of vessels can be computed.

Thus, an estimated lifespan for budget purposes can be developed for use by the unit and the Program Manager.

Yet another example involves the contamination of object code expenditures by large one-time costs. We find that this information, which is contained in the Cost to Target Report (Appendix C), falls into the second category. The information as to total costs within an object code is retrieved but the information as to the costs of the one-time expenditures is not delineated.

It is felt by the authors that if a Management Information System could be designed with only the few data base inputs as are listed in figure 4 and previously discussed, then the task of the Program Manager could be greatly assisted.

B. OTHER CONSIDERATIONS

A critical input of those listed is the documentation of the Program Manager's decision process for any given situation, so as to enlighten future Program Managers as to the background of past decisions in future years. Another key area is the generation of input/output relationships. Utilizing these and other inputs listed in figure 4 the outputs generated will assist the Program Manager in not only planning and administering an original budget, but by manipulating certain figures will aid in planning supplemental budgets should funds be cut by Congress.

Yet it must always be considered that no matter how sophisticated the Management Information System, it can only present information to be analyzed by the manager. For example, even though the MIS can process information inputs regarding individual unit budgetary processes, it remains with the Program Manager to interpret the information presented and to determine budgetary effectiveness among his units. A Management Information System will never replace the Program Manager, only supplement him and make his task a little less complicated.

IX. TOPICS FOR FUTURE RESEARCH

The authors intended this thesis to provide a background and the groundwork for future incorporation of the subhead 30.00 budgetary process into a Management Information System. Problem areas requiring specific information inputs have been delineated and in some cases, suggested procedures toward the achievement of these inputs have been presented. However, it is left to future researchers to follow up on the foundations developed by this thesis. The authors perceive the following information needs as most susceptible to future research and quantification for a data base. The list is not necessarily all-inclusive, nor are the topics listed in any particular order of importance.

1) Sepcific physical relationships regarding an input vs. output configuration need to be quantified. Tables relating fuel consumption per mile at given speeds is currently available at the unit level. Utilizing these and other costs (personnel costs per hour, asset depreciation, etc.) perhaps a figure can be determined which displays a total cost per hour of utilizing a 210 foot cutter on any given mission. Work has already been done in some of these areas however the results must be centralized into a data base if it is to be useful to the Program Manager. It appears that many desired input/output relationships are available somewhere in the field. The process of collecting and formatting

this information would be of great value to any future Management Information System.

2) Research regarding the feasibility or possibly the initiation of groundwork for a financial management training program for perspective unit Commanding Officers and district Program Managers must be undertaken. Suggested areas to be covered might include a familiarization with the budget cycle from both a Congressional and a district level, standardization of record keeping, basic accounting, and instruction on proper documentation procedures of all financial operations.

3) A field study involving the expected and actual lifespan, quantified as per some measure (miles, hours, years), of high cost assets utilized at the unit level must be conducted. If high priced rescue gear, office equipment or safety accessories can be classified by lifespan, the tedious and sometimes impossible task of budgeting replacement assets can be eased. For example, if a P-250 fire pump is two years old and has 500 hours of operation, how long can continued performance be expected? When should the unit plan to budget for a new pump?

4) The authors are at a loss to prescribe a method of attack in the field of government supply sources. Certainly the erratic price fluctuations inherent in the supply system are a persistent harassment to the budgeting function of any manager. Any type study or action which would attempt to dampen the oscillation of prices would be a significant contribution.

5) A thorough examination of the current spectrum of object codes in use for subhead 30.00 control should be initiated. Does the system in use allow the manager an adequate method for controlling costs or are the categories vague and abused by all levels of budgetary flow? An analysis as to whether inept budgetary methods appear as a result of loose object code configurations or as a result of manager disregard for an adequate object code system would be of general interest.

6) A final area perceived by the authors to require future consideration is a method of evaluating the budgetary effectiveness of a unit on a quantitative basis. Some type of standards or rating scheme needs to be established which evaluates a unit's budgetary adequacy with respect to other similar units. Since allocated funds are fixed the alternative to effective budgetary procedures is the penalizing of all units for the budgetary inadequacies of a few.

With the movement of the Coast Guard toward a computer based Management Information System all but inevitable, quality research and intelligent analysis of the aforementioned research areas will enable an effective data base to be constructed for use by district level Program Managers.

APPENDIX A

DISTRICT PROGRAMS, PROGRAM MANAGERS, AND ASSISTANTS

This appendix lists the current programs operated at the district level. Also included is a schedule of Program Managers and Assistant Program Managers responsible for the implementation of their respective programs.

PROGRAMS

PROGRAM MANAGERS

ASSISTANT PROGRAM MANAGERS

1. Search and Rescue *	Chief Operations Division	Chief Search and Rescue Branch
2. Ocean Station Program	Chief Operations Division	Chief Search and Rescue Branch
3. Personnel Support	Chief Personnel Division	
4. Aids to Navigation *	Chief Operations Division	Chief Aids to Navigation Branch
5. Boating Safety	Chief Boating Safety Division	Chief Boating Safety Branch
6. Marine Safety *	Chief Merchant Marine Safety Division	
7. Communications Support	Chief Operations Division	Chief Communications Branch
8. Law Enforcement	Chief Operations Division	Chief Intelligence and Law Enforcement Branch
9. Reserve Training Program *	Chief Reserve Division	
10. Pacific Area Military Preparedness	Commander Pacific Area	

* Indicates interviews conducted in these areas.

APPENDIX B

SUBHEAD 30.00 UNIT BUDGET FLOW

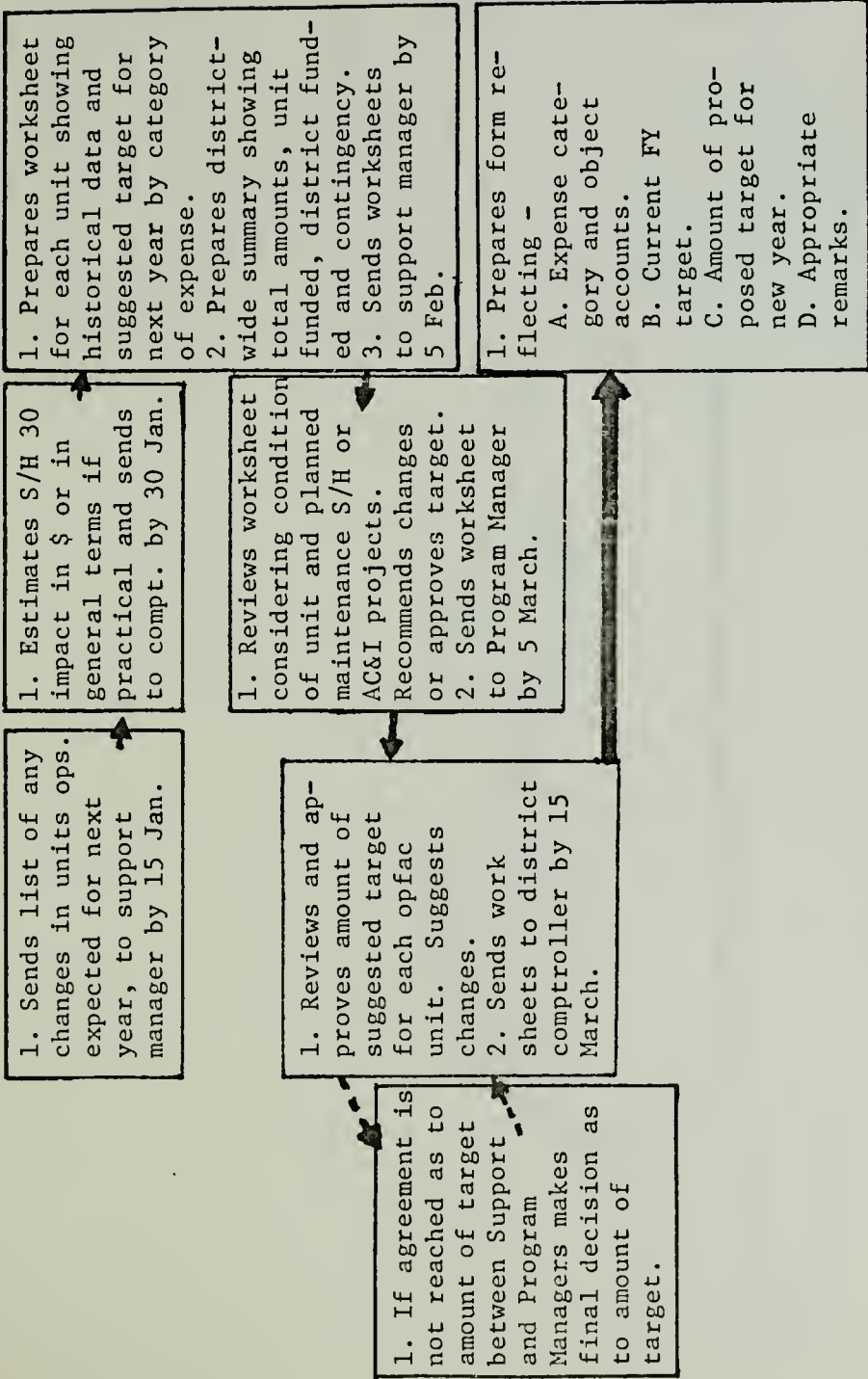
CHIEF OF STAFF

DIST. PROGRAM MANAGER

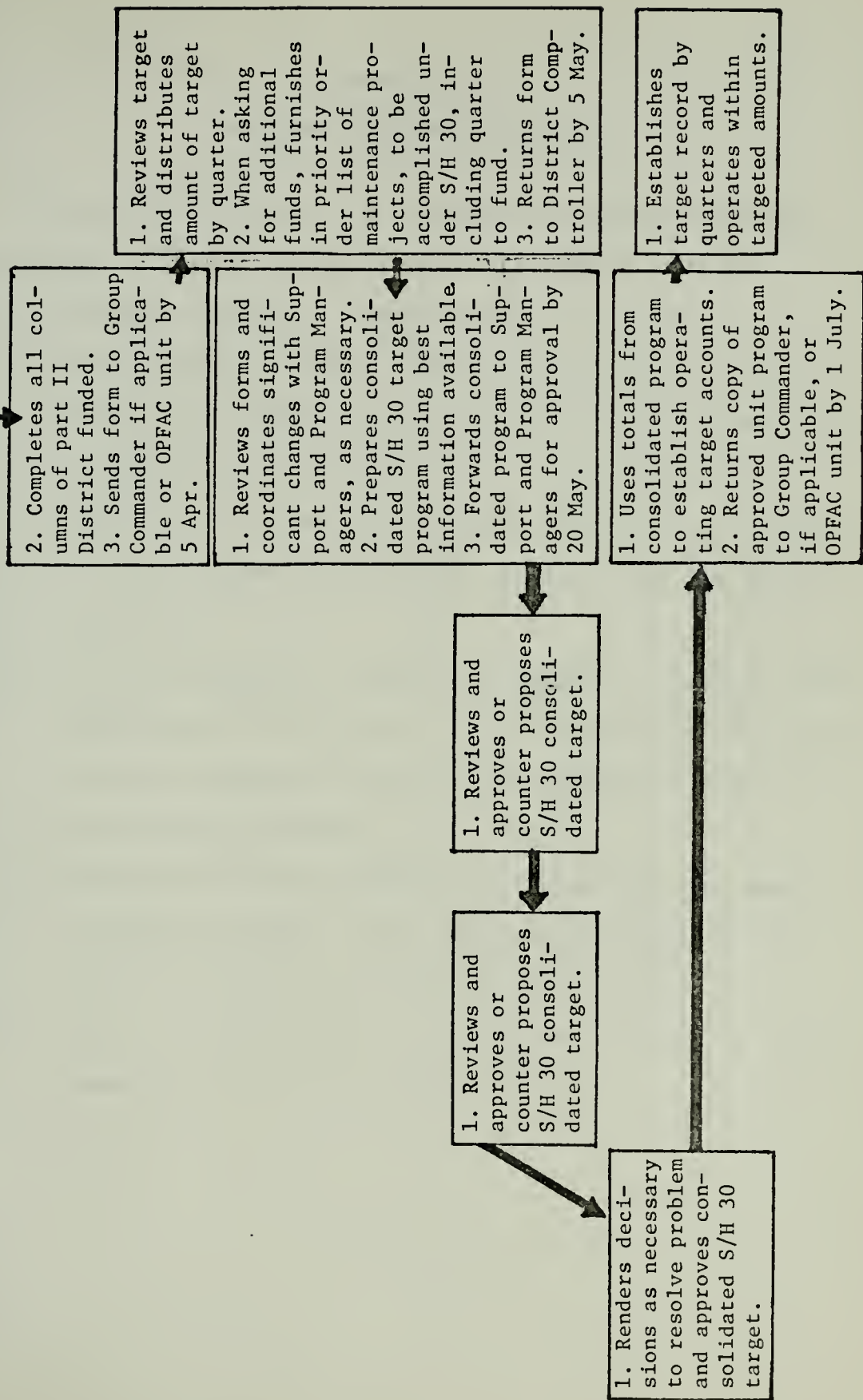
DIST. SUPPORT MANAGER

DISTRICT COMPTROLLER

OPFAC UNIT



Continued



APPENDIX C

PRESENT BUDGETARY REPORTS

This appendix provides a listing of present reports in use by the 12th District's Program Managers as an aid in their budgeting process. Included are:

1. Unit Financial Plan -- prepared quarterly by unit indicating planned expenditures on a priority basis.
2. Target Modification Report -- consisting of a request letter from the unit and the district response to that request indicating internal routing and disposition.
3. Subhead Summary of Budget Estimates -- form CG 4144 submitted by the district to Headquarters requesting current budgetary approval or changes to budget as previously discussed.
4. Allocation Record/Obligation Transmittal -- weekly allotment account report similar to checkbook balance of remaining unit funds unobligated.
5. Cost to Target Report -- computer printout of units expenditures to date by object code.

(SAMPLE)

CG 5-UNIT FINANCIAL PLAN

CG Station North Point, Calif.

1. ~~FY 1973~~ 1st Quarter, FY 1974

1. Funds Status.

Unobligated funds 4th quarter, FY 1973 0

1st Quarter Target \$1000.

Total Funds Available \$1000.

2. Planned Obligations

<u>Project/Procurement</u>	<u>Dept</u>	<u>Object Code</u>	<u>Cost</u>	<u>Priority</u>
a. Housekeeping supplies	Deck	2634	\$175.	I
b. Small Boat Spares	Eng	2545	225.	I
c. Boat Fuel	Deck	2667	100.	I
d. Vehicle	Eng	2116	200.	I
e. Refurbish Mess Deck	Deck	Var	150.	II
f. Contingency	All	Var	150.	
TOTAL			<u>\$1000.</u>	

3. Unfunded Projects/Procurements in Priority Listing.

<u>Project/Procurement</u>	<u>Dept</u>	<u>Object Code</u>	<u>Cost</u>	<u>Priority</u>
a. UTB Engine Overhaul	Eng	2545	\$600.	I
b. Renew Wet Suits(2)	Deck	2644	250.	I
c. Renew Foul Weather Jackets(4)	Deck	2634	110.	II
d. Replace Ping Pong Table	All	3155	80.	III

4. Request District fund and procure ping pong table. A Board of Survey is being submitted on old table which is beyond economical repair. Request additional funds for engine overhaul in time to facilitate early August overhaul.

W. T. HATCH



DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

Enclosure (3)
CCGD12 INST 7132.1
Address reply to:

Date:
7100

From:
To: Commander, Twelfth Coast Guard District
Via: (Group Commander if Applicable)
Subj: Request for Target Modification; normal and ordinary items which
cannot be funded from unit's _____ Target
Ref: (a) Para. 0106 CSAQ
(b) CCGD12 Instruction 7132.1

1. It is requested that my Subhead 30 Target for the _____ Quarter be increased to cover the items listed on the enclosed unit Financial Plan. As shown on the Plan, items estimated to cost \$_____ are needed but cannot be funded from my Target in the upcoming quarter, and future quarter funds cannot be used without detriment to material condition of the unit. I have assigned priorities to the unfunded items in accordance with reference (a).

(Signature of CO/Oinc)

Encl: (1) Unit Financial Plan

TRANSPORTATION DEPARTMENT U. S. Coast Guard Form CGD12-79A (Rev. 8-74)		SUBHEAD 30 TARGET MODIFICATION		Serial No (for use only)					
From: Commander, 12th CG District(f)		To:		Via:					
Reference:									
Unit/Staff TARGET _____ under Subhead 30 for FY _____ is hereby modified as follows:									
OBJECT CODE	FIRST QUARTER <small>Use Appropriate Column</small>		SECOND QUARTER <small>Use Appropriate Column</small>		THIRD QUARTER <small>Use Appropriate Column</small>		FOURTH QUARTER <small>Use Appropriate Column</small>		
	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease	
	UNIT CONTROLLED Subhead 12 30 00 _____ (Use short WHITE copy)								
DIST. CONTROLLED Subhead 12 30 00 _____ (Use short PINK copy)									
Explanation: This modification represents an authorized expenditure variation from the annual SUBHEAD 30 TARGET.									
FOR USE BY CGD12(f) ONLY									
Date		Signature							

PROGRAM/SUPPORT MANAGERS WILL FILL IN THE FOLLOWING

Source/Disposition of Funds	FIRST QUARTER <small>Use Appropriate Column</small>		SECOND QUARTER <small>Use Appropriate Column</small>		THIRD QUARTER <small>Use Appropriate Column</small>		FOURTH QUARTER <small>Use Appropriate Column</small>	
	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease
5-digit Object								
PRIORITY CATEGORY: I II III (Circle priority number selected from the definitions in Para. 0107, CSMC)								
Remarks:								
Recommend Approval <input type="checkbox"/> Disapproval <input type="checkbox"/> and Priority Circled.			Comptroller Review Date _____ Concur <input type="checkbox"/> Do not concur <input type="checkbox"/> Control No. _____ Remarks:			Approved. Date _____ Chief of Staff/Comptroller/SH Manager		
Asst. Program Manager _____ Program/Support Manager _____			District Comptroller			CGD12 FISCAL BRANCH		
DISTRIBUTION						VALIDATED AS TO AVAILABILITY OF FUNDS		
Short Copy Addressee 1st long copy for Confirmation copy 2nd long copy Program/SH Mgr. Confirmation copy 3rd long copy for Posting copy 4th long copy for Follow-up and Control No. copy 5th long copy Program/SH Mgr. follow-up copy						Date Initials		

TRANSPORTATION DEPARTMENT U. S. Coast Guard FORM CGG12-72B (Rev.5-72)		SUBHEAD 30 TARGET MODIFICATION				Serial No. (if use only)		
From: Commander, 12th CG District(f)		To:			Via:			
Reference:								
Unit/Staff TARGET _____ under Subhead 30 for FY _____ is hereby modified as follows:								
OBJECT CODE	FIRST QUARTER		SECOND QUARTER		THIRD QUARTER		FOURTH QUARTER	
	Use Appropriate Column		Use Appropriate Column		Use Appropriate Column		Use Appropriate Column	
	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease
UNIT CONTROLLED Subhead 12 30 00 _____								
<div style="display: flex; justify-content: space-between;"> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> </div>								
Explanation: This modification represents an authorized expenditure variation from the annual SUBHEAD 30 TARGET.								
FOR USE BY CCGD12(f) ONLY								
Date:		Signature:						

TRANSPORTATION DEPARTMENT U. S. Coast Guard FORM CGG12-72B (Rev.5-72)		SUBHEAD 30 TARGET MODIFICATION				Serial No. (if use only)		
From: Commander, 12th CG District(f)		To:			Via:			
Reference:								
Unit/Staff TARGET _____ under Subhead 30 for FY _____ is hereby modified as follows:								
OBJECT CODE	FIRST QUARTER		SECOND QUARTER		THIRD QUARTER		FOURTH QUARTER	
	Use Appropriate Column		Use Appropriate Column		Use Appropriate Column		Use Appropriate Column	
	Increase	Decrease	Increase	Decrease	Increase	Decrease	Increase	Decrease
DIST. CONTROLLED Subhead 12 30 00 _____ (Do not enter to Unit Allocation Record)								
<div style="display: flex; justify-content: space-between;"> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> <div style="width: 15%; border-left: 1px solid black; border-right: 1px solid black; height: 100px;"></div> </div>								
Explanation: This modification represents an authorized expenditure variation from the annual SUBHEAD 30 TARGET.								
FOR USE BY CCGD12(f) ONLY								
Date:		Signature:						

TARGET MODIFICATION KEY PUNCH WORKSHEET

Coded By:

Recorded ALC By:

Key punched By:

[illegible]

COMMANDANT TARMOD CARD FORMAT
(Enter even dollars only)

Adm. Allot Unit 1-2	Apr.	FY	Sub- Head	OPFAC Code	Exp. Cat.	AMOUNTS			
						1st Qtr	2nd Qtr	3rd Qtr	4th Qt
	3	4	5-6	7-11	12-13	14-20	21-27	28-34	35-41
12	1		30						
✓	✓		✓						

DEPARTMENT OF TRANSPORTATION U. S. COAST GUARD CG-4144 (Rev. 8-71)		SUBHEAD SUMMARY OF BUDGET ESTIMATES			REPORTS CONTROL SYMBOL CBU-1061	
Instructions are contained in Manual of Budgetary Administration and COMDTINST 7110.1 Series.						
ALLOTMENT UNIT CODE AND NAME		SUBHEAD CODE AND TITLE			FISCAL YEAR (CY+1)	
PART I SUMMARY COMPUTATION OF ALLOTMENT						
ITEM	DESCRIPTION	A. CURRENT YEAR ALLOTMENT 1/	B. REQUESTED BY ALLOTMENT UNIT CY+1	C. PLANNED BY HEADQUARTERS FOR CY+1		
1.	Annual allotment from prior year					
2.	Less recurrent savings from prior year (-)					
3.	Less nonrecurrent costs from prior year (-)					
4.	Plus new recurrent costs					
5.	Plus new nonrecurrent costs					
6.	Annual allotment					
DATE SUBMITTED		SUBMITTED (ALLOTMENT UNIT)		DATE	APPROVED (CBI)	
1/ COLUMN (C) OF FORM CG-4144 FOR CURRENT YEAR						

PREVIOUS EDITION MAY BE USED

COST TO TARGET REPORT IN EVEN DOLLARS SEPTEMBER 1974
CAPE HEDGE 13112 UNIT CONTROL

ITEM	DATE	QTR	OBJECT CODE	FUTURE TARGET	AVAILABLE TARGET	COST AND UNDELIVERED	BALANCE AVAILABLE
COST	9304	0	2116			202	
BASE	7014	1	2116		375		
BASE	7014	2	2116	375			
BASE	7014	3	2116	375			
BASE	7014	4	2116	375			
OBJECT TOTAL				1125	375	202	173
BASE	7014	1	0025		400		
BASE	7014	2	0025	350			
BASE	7014	3	0025	350			
BASE	7014	4	0025	350			
COST	9304	0	2625			481	
UNCL	9304	0	2625			324	
OBJECT TOTAL				1050	400	805	405CR
COST	9304	0	2634			736	
UNCL	9304	0	2634			351	
BASE	7014	1	2634		900		
BASE	7014	2	2634	900			
BASE	7014	3	2634	1800			
BASE	7014	4	2634	900			
OBJECT TOTAL				3600	900	1087	187CR
BASE	7014	1	0035		400		
BASE	7014	2	0035				
BASE	7014	3	0035	350			
BASE	7014	4	0035	350			
COST	9304	0	2635			769	
UNCL	9304	0	2635			247	

COST TO TARGET REPORT IN EVEN DOLLARS SEPTEMBER 1974
CAPE HEDGE 13112 UNIT CONTROL

ITEM	DATE	QTR	OBJECT CODE	FUTURE TARGET	AVAILABLE TARGET	COST AND UNDELIVERED	BALANCE AVAILABLE
OBJECT	TOTAL			1050	400	1016	616CR
BASE	7014	1	0044		400		
BASE	7014	2	0044	400			
BASE	7014	3	0044	400			
COST	9304	0	2644			204	
OBJECT	TOTAL			800	400	204	196
BASE	7014	1	0045		50		
BASE	7014	2	0045	50			
BASE	7014	3	0045	50			
BASE	7014	4	0045	50			
OBJECT	TOTAL			150	50		50
COST	9304	0	2665			1409	
BASE	7014	1	2665		2200		
BASE	7014	2	2665	2200			
BASE	7014	3	2665	1000			
TMOB	9184	3	2655	1000			
BASE	7014	4	2665	1000			
TMOB	9184	4	2665	1000			
OBJECT	TOTAL			6200	2200	1409	791
COST	9304	0	2667			17	
OBJECT	TOTAL					17	17CR
GRAND	TOTAL			13975	4725	4740	15CR

COST TO TARGET REPORT IN EVEN DOLLARS SEPTEMBER 1974
CAPE HEDGE 13112 DIST CONTROL

ITEM	DATE	QTR	OBJECT CODE	FUTURE TARGET	AVAILABLE TARGET	COST AND UNDELIVERED	BALANCE AVAILABLE
COST	9304	0	2302			694	
BASE	7014	1	2302		625		
BASE	7014	2	2302	625			
BASE	7014	3	2302	625			
BASE	7014	4	2302	625			
OBJECT TOTAL				1875	625	694	69CR
COST	9304	0	2303			987	
BASE	7014	1	2303		800		
BASE	7014	2	2303	800			
BASE	7014	3	2303	800			
BASE	7014	4	2303	800			
OBJECT TOTAL				2400	800	987	187CR
COST	9304	0	2304			105	
BASE	7014	1	2304		150		
BASE	7014	2	2304	150			
BASE	7014	3	2304	150			
BASE	7014	4	2304	150			
OBJECT TOTAL				450	150	105	45
GRAND TOTAL				4725	1575	1786	211CR

APPENDIX D

OBJECT CODES ASSOCIATED WITH THE SUBHEAD 30.00 FUNDING SYSTEM

12 30 00 XX OPERATING & EXPENSE COSTS - DISTRICT FUNDS

Administrative & Support Costs:

- 1938 Wageboard Employee's & Lamplighter's Salaries (Charge wageboard to unit at which employed & lamplighters to 73200)
- 2112 Travel Administrative
- 2119 Travel Administrative - Foreign (Charge TD or TAD for regular members to unit to which traveler is assigned, charge Reserve RL & SPAR Trainee to 87211, Reserve RA Trainee to 87221 and Reserve ACDU for domestic emergencies 87700 or 87800. Charge administrative travel of Auxiliary members to 71010. For District Office charge division code. Charge 79803 for travel of military members to and from hospital)
- 2116 Rental of Passenger Vehicle (Charge to Unit to which vehicle assigned)
- 2202 Rental of Non-Passenger Vehicles (Charge to Unit to which vehicle assigned)
- 2200 Transportation of Things (Charge to Shipping unit on outgoing, consignee on incoming)
- 2302 Utility Services (heat, light, power, gas, electricity, water & sewerage furnished by public or private utility companies) & garbage removal (Charge unattended A to N ashore to 73200, all other to unit receiving service)
- 2304 Rental - property & equipment (Charge to unit using the property or equipment)
- 2400 Printing, copies from office copiers & reproduction (Charge to unit, servicewide expense category or District staff component which benefits or needs the job)
- 2559 Miscellaneous Services; Stenographic, inspection, witness expense, incidental expense investigations, etc
- 2651 Inventory Adjustments (Use by Accounting Office only)
- 2660 Accessorial Charges - Surcharges & allowances on DSA Billings (Use 79805)
- 4202 Indemnities - Claims against CG for loss or damage to real or personal property (Charge to responsible unit)

Routine Maintenance & Repair Costs: (Charge to individual OPFAC Codes)

- 2525 Cutters, Main Propulsion - Services
- 2625 Cutters, Main Propulsion - Supplies & Materials
- 2535 Cutters, Auxiliary Equipment - Services
- 2635 Cutters, Auxiliary Equipment - Supplies & Materials

- 2541 Aviation Program - Services (Charge to 20180, 20910, 20920, or 20930)
- 2641 Aviation Program - Supplies & Materials (Charge to 20180, 20910, 20920 or 20930)
- 2542 Electronic Equipment - Service (Units with ET's only)
- 2642 Electronic Equipment - Supplies & Materials (Units with ET's only)
- 2544 Other, Cutters & Shore - Service
- 2644 Other, Cutters & Shore - Supplies & Materials
- 2545 Small Boats - Service
- 2645 Small Boats - Supplies & Materials
- 2546 A to N & Marine Science Equipment - Services (Not initially funded under SH 30)
- 2646 A to N & Marine Science Equipment - Supplies & Materials (Not initially funded under SH 30)
- 2554 Ordnance - Service (Not initially funded under SH 30)
- 2654 Ordnance - Supplies & Materials (Not initially funded under SH 30)
- 2555 Recreation - Service (Funded under Suballotments only)
- 2655 Recreation - Supplies & Materials (Funded under Suballotments only)
- 2556 Training Aids - Service (Not initially funded under SH 30)
- 2656 Training Aids - Supplies & Materials
- 2557 Medical & Dental Equipment - Services (Units with HM's only)
- 2657 Medical & Dental Equipment - Supplies & Materials (Units with HM's only)

Other Supplies & Materials:

- 2634 Housekeeping - Shore units & Cutters (Charge to Unit OPFAC Code)
- 2658 Avionics (Charge to 20180, 20910, 20920 or 20930)

Fuel Costs:

- 2662 Aircraft (Charge to 20180 for Jet Fuel, 20930 for HU16E)
- 2665 Propulsion, OPFAC Cutters (Charge to OPFAC Cutter)
- 2667 Boats & CG Vehicles (Charge to Unit to which attached) (Charge Auxiliary Member fuel to 73500)
- 2668 Other - Coal, fuel oil, kerosene, etc (Charge to OPFAC unit)

Equipment: (Charge to OPFAC Unit)

- 3142 Electronic equipment
- 3144 Equipment - Other
- 3154 Ordnance Equipment (Not initially funded under SH 30)
- 3155 Recreation Equipment (Funded under SH 30 for suballotment units only)
- 3156 Training Equipment (Not initially funded under SH 30)
- 3157 Minor Medical Equipment (Units with HM's only)

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